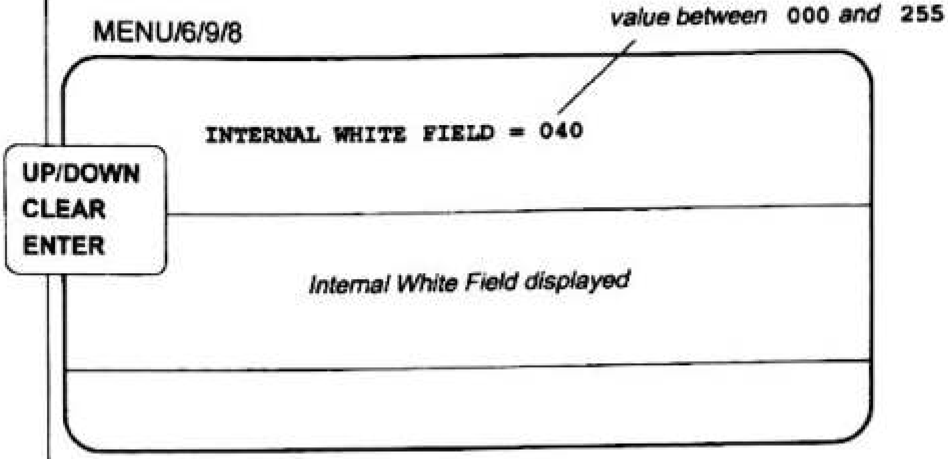
WHITE FIELD

Service Page to calibrate the amplitude of the internal White Field. You need an instrument to measure luminance (e.g. a Thoma TMF Colour Analyzer).

MENU/6/9/8



```
INTERNAL WHITE FIELD = 040
```

Internal White Field displayed

How to calibrate the Internal White Field

Apply an external composite 100% White Field video signal to one of the CODED inputs and select this input.

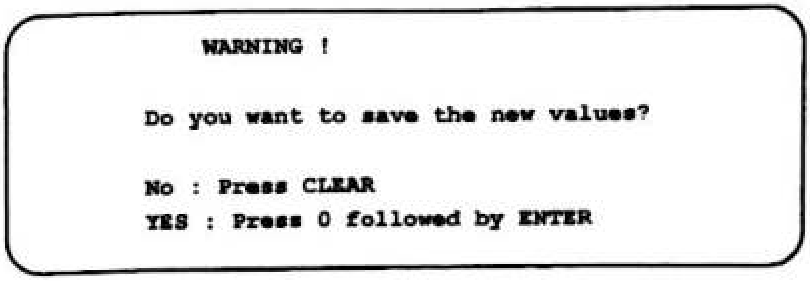
Press **CAL** .

Measure the light output and note down the value in nit, cd/m² or fL.

Select the White Field service page (press **MENU 6 9 8**).

Measure the light output of the now visible Internal White Field and adjust with **UP** and **DOWN** to get the same value as measured for the external one.

Press ENTER to save the new value. You get a warning ;



```
WARNING !

Do you want to save the new values?

No  : Press CLEAR
YES : Press 0 followed by ENTER
```

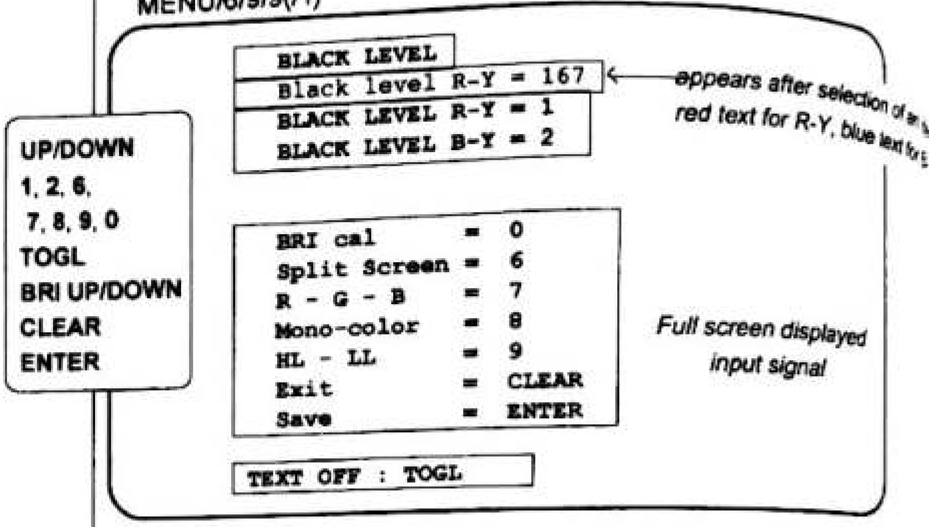
Press **0** and **ENTER** if you want to save. After this you get the message "`NEW VALUES HAVE BEEN SAVED`".

Finally leave the Service Page by pressing **CLEAR**.

BLACK LEVELS

Service Page to align the Black levels of signals inside the monitor.

MENU/6/9/9(/1)



```
BLACK LEVEL
Black level R-Y = 167
BLACK LEVEL R-Y = 1
BLACK LEVEL B-Y = 2

BRI cal       = 0
Split Screen  = 6
R - G - B     = 7
Mono-color    = 8
HL - LL       = 9
Exit          = CLEAR
Save          = ENTER

TEXT OFF : TOGL
```

UP/DOWN
1, 2, 6,
7, 8, 9, 0
TOGL
BRI UP/DOWN
CLEAR
ENTER
appears after selection of a
red text for R-Y, blue text for
Full screen displayed input signal

These inside signals are :

R-Y and B-Y colour difference output signals of the colour decoder when a CODED (composite) input is selected ;

R-Y and B-Y signals when a COMP (analog component) input is selected.

Adjustments that can be made here regard the black or zero levels of colour difference signals. Purpose is to have the level of these signals equal during blanking, clamping and not coloured parts of the picture.
A misalignment is visible as a colouring of the gray parts of the picture; in other words, the picture is not neutral. Note that this may not be confused with Colour temperature or White Balance.

The following functions are available in this Service Page :

Brightness UP/DOWN (key **BRI UP/DOWN**)
To adjust Brightness in order to increase visibility of picture parameters in the lower levels.

BRI cal (key **0**)
To set the Brightness control to its calibrated position again after a brightness control action with **BRI UP/DOWN** (value 100 of the control range 050-200).

BLACK LEVEL R-Y (key **1**)
For alignment of the black level of the R-Y signal.
When selected, a red text "Black level R-Y" appears under the page name to show what is actually adjustable. Adjustment is for the actual input format (CODED or COMP).

BLACK LEVEL B-Y (key **2**)
For alignment of the black level of the B-Y signal.
When selected, a blue text "Black level B-Y" appears under the page name to show what is actually adjustable. Adjustment is for the actual input format (CODED or COMP).

Split Screen (key **6**)
To display the upper half picture in monochrome and the lower half picture in colour.

R -G- B (key **7**)
Toggle function to display the picture in one-colour-only. Facilates measurement with certain specific luminance measurement tools.

Mono-color (key **8**)
To toggle between COLOR and COLOR OFF. The status is shown for a few seconds at the bottom of the page (white text on a blue background).
The Service Page opens in COLOR OFF.
While in COLOR, the saturation is increased to maximum to increase the visibility of Black level faults.

HL-LL (key **9**)
To activate the internal 100%-10% luminance attenuator.
When no lower level input signal is available, alignments can be done on a higher level input signal with the attenuator set for LL or 10% .

CLEAR and **ENTER**
Press **CLEAR** to exit without saving.
Press **ENTER** to save the alignments.

TOGL
To switch ON/OFF the help text.

For how to align Black Levels, refer to following page.

For how to align the Black Level in case of a 10-bit Digital Input, refer to the Manual of this 10-bit Digital Input.

continued on next page

How to align the Black Levels

For the following adjustments, you should work in a darkened environment. Evaluation can be made by eye but a luminance measurement tool is helpful.

Black levels for composite signals (CODED input)

The appropriate input signal for this alignment is Black Burst. Apply it to one of the CODED inputs and select this input.

Select the Black level Service Page (press **MENU 6 9 9**).

Increase the Brightness with the **BRI UP/DOWN** key for some light output (luminance of about 0.7 nit).

Look carefully to the grey picture background you have now and switch with key **8** between COLOR and COLOR OFF. There may be no visible difference.
Eventual differences can be adjusted out, still switching with key **8** and in COLOR by :

pressing **1** and **UP/DOWN** for the R-Y Black level and

pressing **2** and **UP/DOWN** for the B-Y Black level.

After alignment press **ENTER** to save the new values °) .

Black levels for component signals (COMP input)

The appropriate input signal for this alignment is a black field. Apply it to the Y input and select the COMP input.

Select the Black level Service Page (press **MENU 6 9 9**) .

Increase the Brightness with the **BRI UP/DOWN** key for some light output (luminance of about 0.7 nit).

Look carefully to the grey picture background you have now and switch with key **8** between COLOR and COLOR OFF. There may be no visible difference.
Eventual differences can be adjusted out, still switching with key **8** and in COLOR by :

pressing **1** and **UP/DOWN** for the R-Y Black level and

pressing **2** and **UP/DOWN** for the B-Y Black level.

After alignment press **ENTER** to save the new values °) .

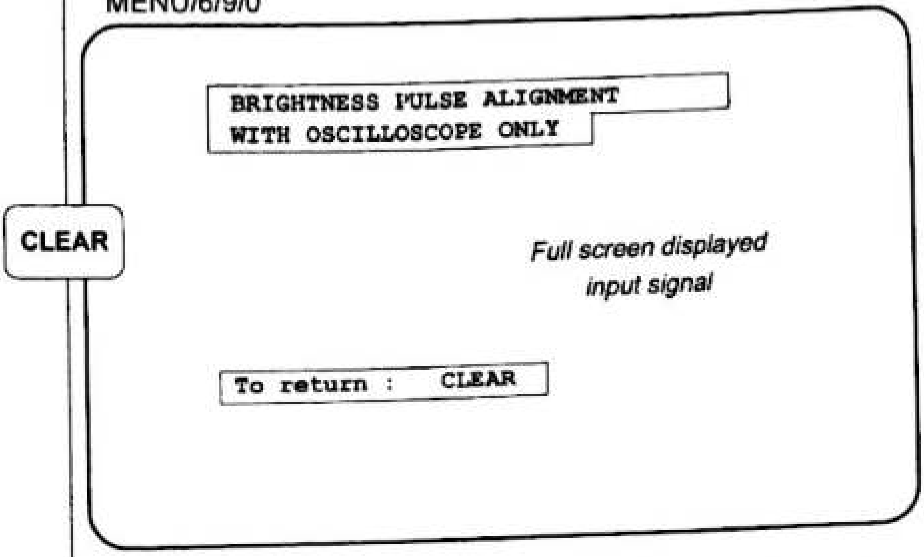
°) When entering the new values, you get the message :

```
     WARNING !
Do you want to save the new values?
No  : Press CLEAR
YES : Press 0 followed by ENTER
```

BRIGHTNESS PULSE

Service Page to calibrate the brightness of the monitor.

MENU/6/9/0



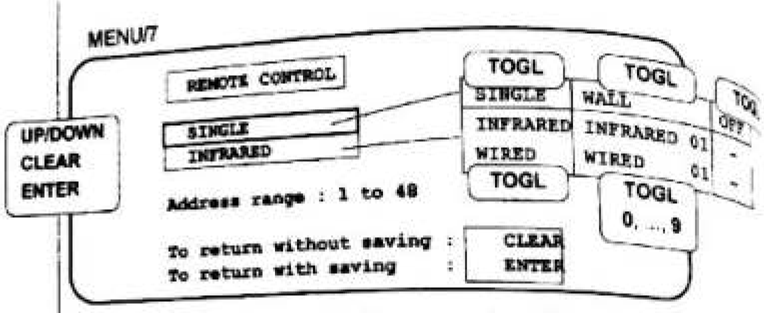
BRIGHTNESS PULSE ALIGNMENT
WITH OSCILLOSCOPE ONLY

Full screen displayed input signal

To return : CLEAR

This Service Page is only visible when the RGB input is selected.
It is a help for hardware calibration.
As you need to open the monitor for measurement and alignment, how to work is not described here but in the CVM 3000 Service Manual.
If you entered by accident this service page, you can leave it by pressing **CLEAR** .

MENU 7 REMOTE CONTROL



The Remote Control menu is used to program two different methods of remote control :

with the MRC 3000 (*) via cable or infrared or
with the SRC(*) or MMRC(*) via cable only.

The menu shows two lines.
Use the **UP/DOWN** key to select a line.
Use **TOGL** to modify the content of a line.
Use the numeric keys **0** to **9** to set the individual Monitor Address between 01 and 48 (address range is 1 to 48).
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

1st line The top line of the menu is for selection `SINGLE / WALL / OFF`

For no remote control at all : set it `OFF`.
For remote control : select `SINGLE` or `WALL`

For SRC and MMRC it does not matter if you set it `SINGLE` or `WALL`, however you have to switch to `WALL` to know and/or set the correct Monitor Address.

continued on next page

(*) MRC 3000 A remote Controller for CVM 3000 only. Controls the monitor via infrared or via a cable connected to the REMOTE 2 connector on the rear side. Adds teletext operation features.

(*) SRC Single Remote Control, a BARCO remote controller for one CVM 3000, CVM2000, CVS, CVM(A) or AVM. More monitors can be controlled if they are connected in series, but not individually then.

(*) MMRC Multi Monitor Remote Controller, a BARCO full remote controller for up to 48 BARCO monitors as CVM 3000, CVM2000, CVS, CVM(A) or AVM, all individually or at the same time.

With the MRC 3000 you have many possibilities described below

You select `SINGLE`
when you have only one monitor to control or
when you have more monitors to control they may all react identically.

You select `WALL`
when you have more monitors to control and you want to control them individually.

In other words, with `SINGLE` the monitor listens to all instructions coming in via IR or wired; with `WALL` the monitor listens only to codes via IR or wired when being "selected" (by its address) for remote control via the MRC3000.

2nd line The 2nd line of the menu is for selection `INFRARED / WIRED XX` and has a meaning only for remote control with the MRC 3000.

For infrared remote control : set it `INFRARED`.
For remote control via wire : set it `WIRED XX` with the correct monitor address.

For SRC and MMRC it does not matter how you set it.

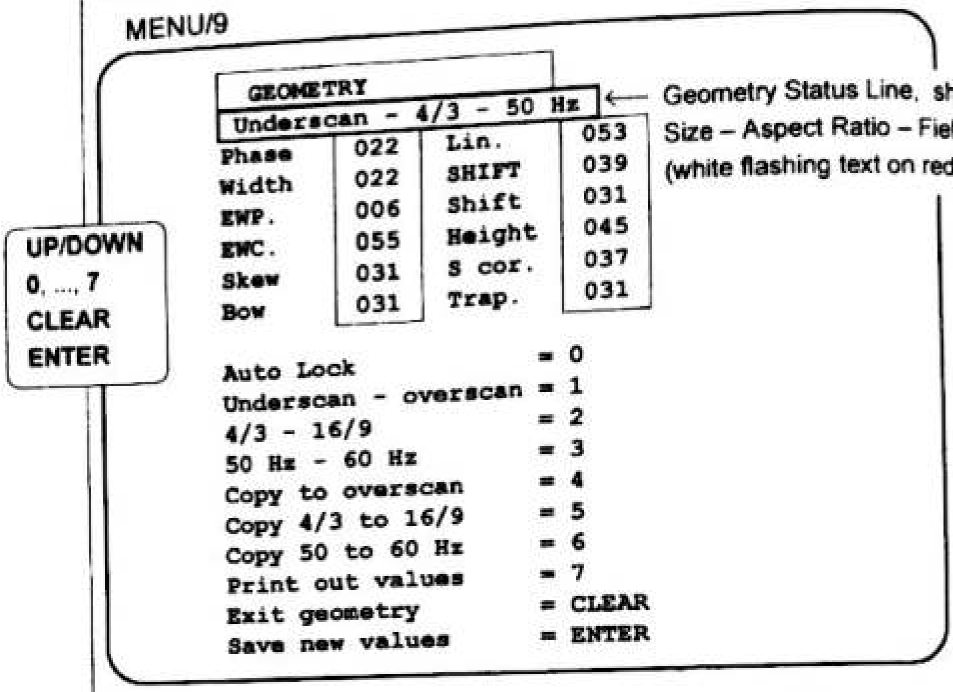
For more For more information on how to install and operate monitors for remote control with the MRC 3000, refer to the section in this manual that handles this Remote Controller.

Other methods There is also the RIS remote control method (**see MENU 4/2**)

MENU 9 GEOMETRY

For authorized personnel only

Menu to adjust picture geometry parameters.
Refer to "How to adjust Geometry ?" for the best procedure.



MENU/9

```
GEOMETRY
Underscan - 4/3 - 50 Hz
Phase     022   Lin.     053
Width     022   SHIFT    039
EWP.      006   Shift    031
EWC.      055   Height   045
Skew      031   S cor.   037
Bow       031   Trap.    031

Auto Lock                  = 0
Underscan - overscan       = 1
4/3 - 16/9                 = 2
50 Hz - 60 Hz              = 3
Copy to overscan           = 4
Copy 4/3 to 16/9           = 5
Copy 50 to 60 Hz           = 6
Print out values           = 7
Exit geometry              = CLEAR
Save new values            = ENTER
```

Geometry Status Line, showing Size – Aspect Ratio – Field Frequen
(white flashing text on red backgrou

The monitor contains 8 sets of Geometry parameters which correspond to 8 different scan size - format - field frequency combinations. All combinations have the same number of alignment parameters which can all be aligned independently. There are copy facilities foreseen to speed up alignment.

The 8 size / aspect ratio / field frequency combinations are :

underscan - 4/3 - 50 Hz
overscan - 4/3 - 50 Hz
underscan - 4/3 - 50 Hz
overscan - 4/3 - 50 Hz
underscan - 16/9 - 60 Hz
overscan - 16/9 - 60 Hz
underscan - 16/9 - 60 Hz
overscan - 16/9 - 60 Hz

Under the menu name is displayed the actual scan combination. It is a white flashing text on a red background.
You can select another scan combination by means of the 3 keys :

1 to toggle Underscan - overscan
2 to toggle 4/3 - 16/9
3 to toggle 50 Hz - 60 Hz

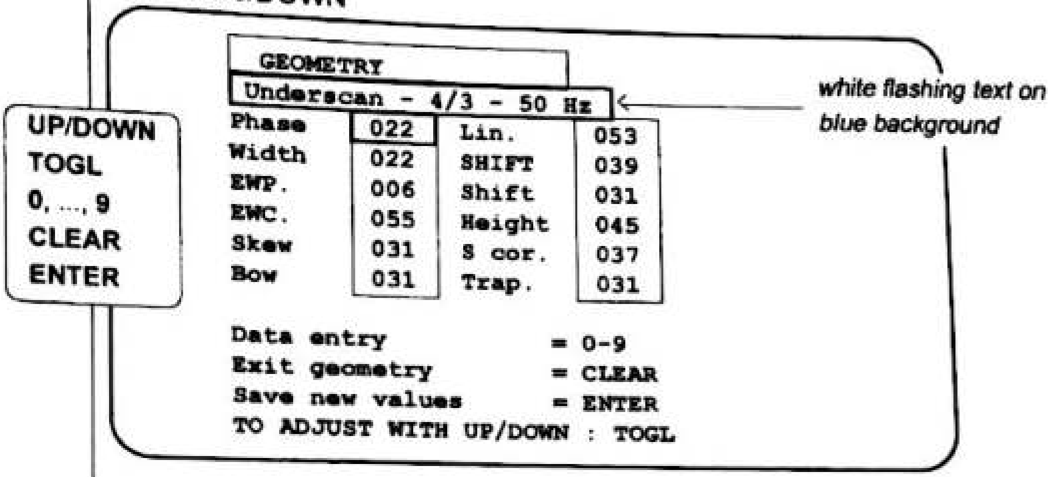
There are 3 copy functions for alignment values through the keys :

4 to copy underscan -> overscan
5 to copy 4/3 -> 16/9
6 to copy 50 Hz -> 60 Hz

For each scan size - aspect ratio - field frequency combination, there are 12 alignment parameters available. In addition there is the Auto Lock which is common for all combinations.

To select an alignment parameter, press **UP/DOWN**. A red field marks the active parameter. The menu looks like :

MENU/9/DOWN



```
GEOMETRY
Underscan - 4/3 - 50 Hz
Phase   022   Lin.    053
Width   022   SHIFT   039
EWP.    006   Shift   031
EWC.    055   Height  045
Skew    031   S cor.  037
Bow     031   Trap.   031

Data entry          = 0-9
Exit geometry       = CLEAR
Save new values     = ENTER
TO ADJUST WITH UP/DOWN : TOGL
```

white flashing text on blue background

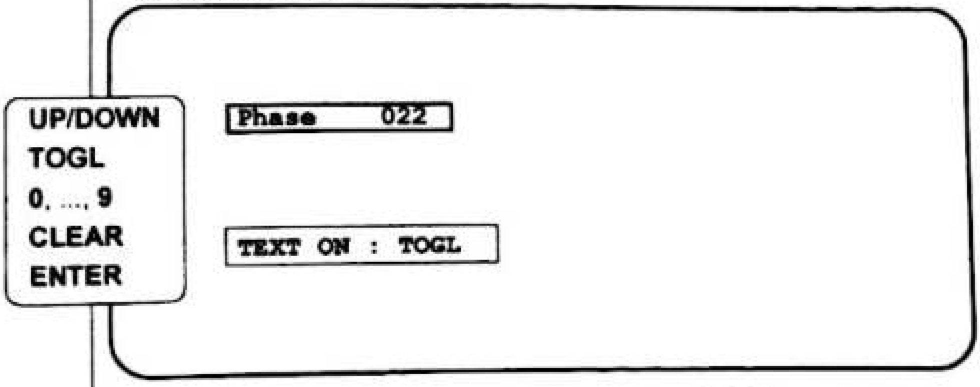
To align a parameter, after selection of the parameter you have two methods to adjust :

modify the parameter via the numeric keys or more easily,

press **TOGL** and then use the **UP/DOWN** key to align or again enter numeric values via the numeric keys.

Then the menu looks like :

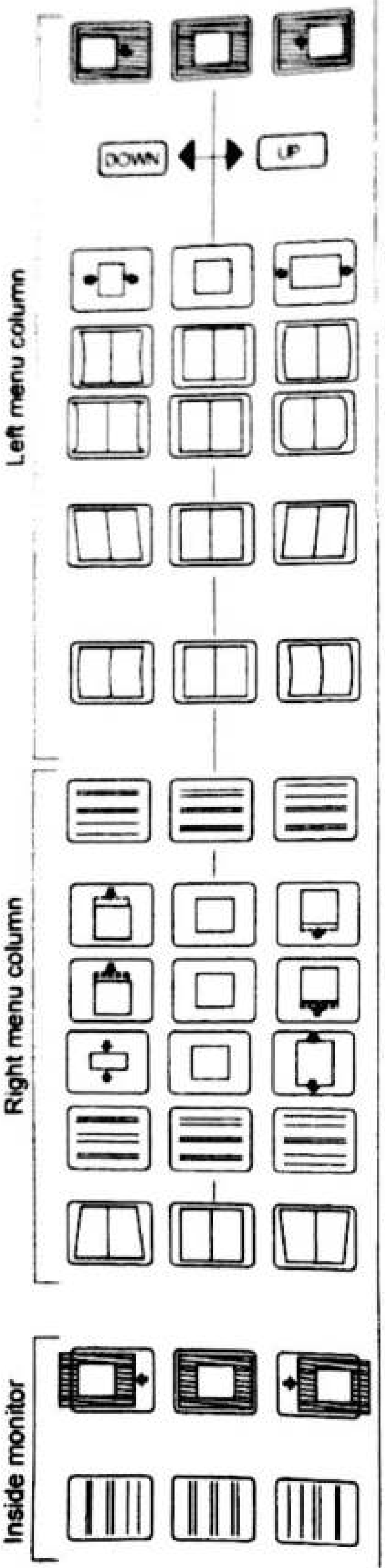
MENU/9/DOWN/TOGL



```
Phase     022

TEXT ON : TOGL
```

To align another Geometry parameter, press **TOGL** to return to the Geometry menu again.

more on next page



Phase	HORIZONTAL PHASE UP & DOWN Used to adjust the horizontal position of the picture. This adjustment modifies the time relation between deflection and input signal. Do not confuse this with "Horizontal Shift", which is an inside potentiometer adjustment and which shifts the total scanning horizontally.
Width	PICTURE WIDTH UP & DOWN Picture width or horizontal amplitude adjustment.
EWP.	EAST-WEST PARABOLA UP & DOWN East-West or side pincushion distortion correction.
EWC.	EAST-WEST CORNER UP & DOWN East-West corner adjustment. Used to correct for top and bottom pincushion distortion.
Skew	SKEWING Used to set vertical lines correctly vertical in the centre of the screen; or to set for correct rectangularity of the total picture.
Bow	BOWING Used to make vertical lines correctly straight in the centre of the screen. Can also be called "horizontal centering linearity".
Lin.	VERTICAL LINEARITY UP & DOWN Vertical linearity adjustment. Can also be called "vertical linearity balance".
SHIFT	VERTICAL SHIFT UP & DOWN coarse Vertical picture positioning (coarse adjustment)
Shift	VERTICAL SHIFT UP & DOWN fine Vertical picture positioning (fine adjustment)
Height	PICTURE HEIGHT UP & DOWN Picture height or vertical amplitude adjustment.
S cor.	VERTICAL S-CORRECTION UP & DOWN Vertical S-correction setting. Can also be called "vertical linearity gain".
Trap	TRAPEZOIDAL CORRECTION UP & DOWN Can also be called "side pincushion tilt".

Geometry parameters adjusted inside the monitor

HSHIFT	HORIZONTAL SHIFT Potentiometer on the deflection board used to adjust the horizontal position of the scanned lines. Do not confuse this with **Phase.**
HLIN	HORIZONTAL LINEARITY Potentiometer on the deflection board used to adjust the horizontal deflection linearity.

Autolock (Key **0**) Key to start automatic alignment of the horizontal (or line) frequency with as reference the displayed signal. This alignment is common for all eight geometry sets of parameters (50 Hz as well as 60 Hz).

Underscan - overscan (key **1**) Key to toggle between Underscan and Overscan size. The size is indicated in the Geometry Status Line on top.

4/3 - 16/9 (key **2**) Key to toggle between 4/3 and 16/9 aspect ratio. The aspect ratio is indicated in the Geometry Status Line on top.

50 Hz - 60 Hz (key **3**) Key to toggle between 50 Hz and 60 Hz Field Frequency. The frequency is indicated in the Geometry Status line on top.

Copy to overscan (key **4**) Key to copy the geometry values from underscan to overscan size (for the same aspect ratio and field frequency) . It does not matter to what scan size the monitor is set at that moment.

Copy 4/3 to 16/9 (key **5**) Key to copy the geometry values (underscan and overscan) of 4/3 to 16/9 for the same field frequency.

Print out values (key **7**)

A single key press starts the transmission of a report of all geometry alignment values to a printer (if connected) via the REMOTE 1 connector on the rear side of the monitor.

Exit Geometry (key **CLEAR**) Key to leave the geometry adjustment mode without saving (e.g. in case of an operation mistake or to stop geometry alignment eventually after saving the new values having pressed **ENTER** before). You go out of menu then and see the normal picture.

Save new values (key **ENTER**) Key to save all the geometry alignment values (not only those which are actually displayed). The message "`NEW VALUES HAVE BEEN SAVED`" is displayed then.
The previous alignment will be overwritten.

TOGL Key to switch on/off the on-screen help text. Note that this function is only available when an alignment parameter is selected. It is not available in the Geometry main menu.

more on next page

How to adjust geometry?

1 Go into Geometry alignment (press **MENU 9**).
Check for "Underscan – 4/3 – 50 Hz" (normally so).
Apply a 4/3 - 50 Hz signal.
Adjust and eventually save (key **ENTER**).

2 Copy to overscan (press **4**).
Select "Overscan - 4/3 - 50 Hz" (press **1** for Overscan).
Adjust and eventually save (key **ENTER**).

3 Copy 4/3 to 16/9 (press **5**).
Select "Underscan – 16/9 – 50 Hz" (press **1** for Underscan and **2** for 16/9) .
Apply a 16/9 - 50 Hz signal.
Adjust and eventually save (key **ENTER**).

4 Copy to overscan (press **4**).
Select "Overscan - 16/9 - 50 Hz" (press **1** for Overscan).
Adjust and eventually save (key **ENTER**).

5 Copy 50 to 60 Hz (press **6**).
Select "Underscan - 4/3 - 60 Hz" (press **1** for Underscan, **2** for 4/3 and **3** for 60 Hz).
Apply a 4/3 - 60 Hz signal.
Adjust and eventually save (key **ENTER**).

6 Copy to overscan (press **4**).
Select "Overscan - 4/3 - 60 Hz" (press **1** for Overscan).
Adjust and eventually save (key **ENTER**).

7 Copy 4/3 to 16/9 (press **5**).
Select "Underscan – 16/9 – 60 Hz" (press **1** for Underscan and **2** for 16/9) .
Apply a 16/9 - 60 Hz signal.
Adjust and eventually save (key **ENTER**).

8 Copy to overscan (press **4**).
Select "Overscan - 16/9 - 60 Hz" (press **1** for Overscan).
Adjust and save (key **ENTER**).
Leave Geometry alignment mode (key **CLEAR**).

MENU
0 PRIVILEGE SETTING

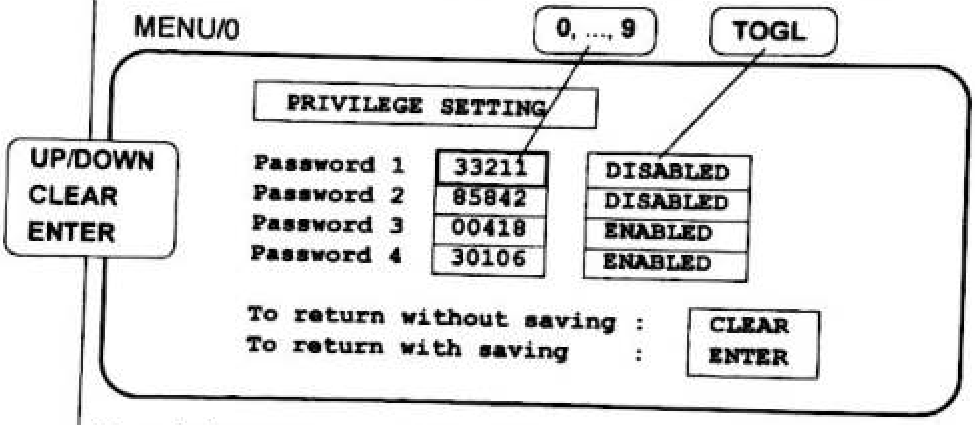
The Privilage Setting menu allows the control of passwords.
It makes them visible and permits modification.
On the menu below are shown the factory set passwords. They can have been modified to others in your monitor afterwards.

To get into this menu, the highest password (password 4) must be entered first.
To do so, press **FUNC 0** , then enter "password 4" and finally press **ENTER**.
Or, starting from normal picture :

FUNC **0** **X** **X** **X** **X** **X** **ENTER**

Once a password is entered, it remains active within about 10 minutes after the last keypress in a menu status.
Passwords have to be re-entered after turn-on of the monitor.

MENU/0



`PRIVILEGE SETTING`

Password 1	33211	DISABLED
Password 2	85842	DISABLED
Password 3	00418	ENABLED
Password 4	30106	ENABLED

To return without saving : CLEAR
To return with saving : ENTER

Once in the menu, press **UP** or **DOWN** to move the red field.
Enter new passwords using the numeric keys **0** to **9** .
Press **TOGL** to switch between `DISABLED` and `ENABLED` .
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

Available keys and functions if all passwords are enabled :

No password entered : **VOL CAL PRE VIDEO RF FUNC** (table)
VIDEO/TELETEXT via IR Remote Control
VITC functions
Password 1 entered : all keys and functions except **MENU**
Password 2 entered : all keys and functions except sub-menus :
0 PRIVILEGE SETTING
6 ALIGNMENT
9 GEOMETRY
Password 3 entered : all keys and functions except sub-menu :
0 PRIVILEGE SETTING
Password 4 entered : all keys and functions

MRC 3000

The MRC 3000 is a Remote Controller for the CVM 3000 monitor range. Remote control goes "infrared" or "wired".

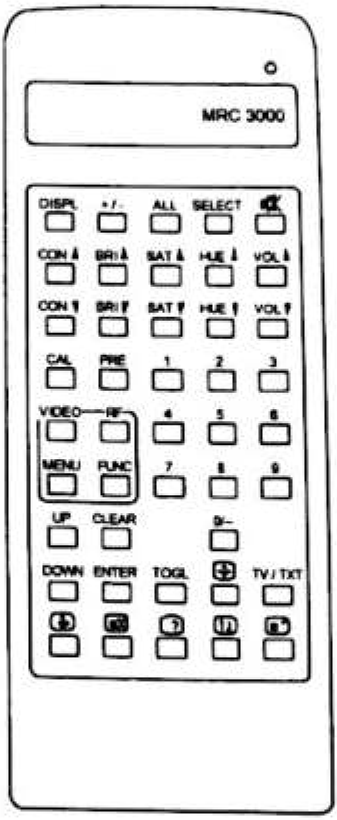
The MRC 3000 permits remote control of all controls, input selections and functions available on the CVM 3000 monitor. Additionally there is :

Sound MUTE function.
Wall control (individual control of a number of monitors).
Extended Teletext operation.

Standard monitor operations

CON UP/DOWN
BRI UP/DOWN
SAT UP/DOWN
HUE UP/DOWN
VOL UP/DOWN
CAL & PRE
VIDEO, FUNC, RF & MENU
1, 2, 3, ..., 9, 0/--
UP, DOWN & TOGL
CLEAR & ENTER

Refer to the user part of the CVM 3000 manual for a detailed description.



Additional features

MUTE

Switches ON/OFF the sound signal out of the monitor.

DISPL +/- ALL SELECT

Four keys used to remote control CVM 3000 monitors set in a "Wall Configuration".
A wall configuration can be built up in different ways. This is described later with some example applications.
Control can happen infrared, wired or in a combination of both. It depends on the physical position (to permit infrared) and interwiring of controller and monitors, and on how the monitors are programmed (via MENU 7).
The monitors in a Wall Configuration, can be "selected" or "not-selected". A selected monitor listens to remote control codes; a "not-selected" monitor does not.
A selected monitor shows a red Address number on the screen when there is asked for (pressing **DISPL**), a "not-selected" monitor shows a green Address number.

DISPL
To see the selection status and the addresses of the wall monitors.
The colour of the displayed address has a meaning :

If red : the monitor is selected and listens.
If green : the monitor is not selected and does not listen.
If also blinking : the monitor can receive Infrared.

+/-
Key to start selection or de-selection of a monitor. Must be followed by the address of a monitor.

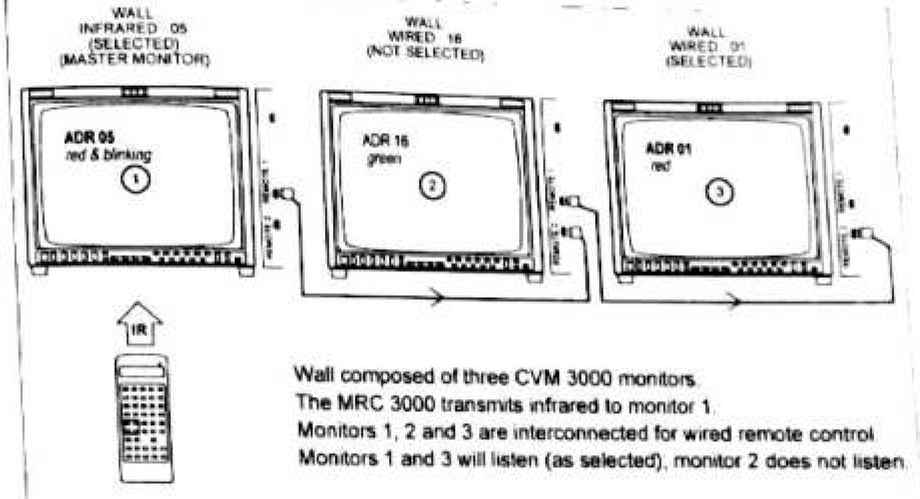
ALL
Key to set all monitors selected at once.

SELECT
Key to select one monitor while all others are de-selected at once. Must be followed by a monitor address.

Use the **CLEAR** key to interrupt a selection or de-selection. However once an address number has been fully entered or **ALL** is pressed, the selection is carried out accordingly.

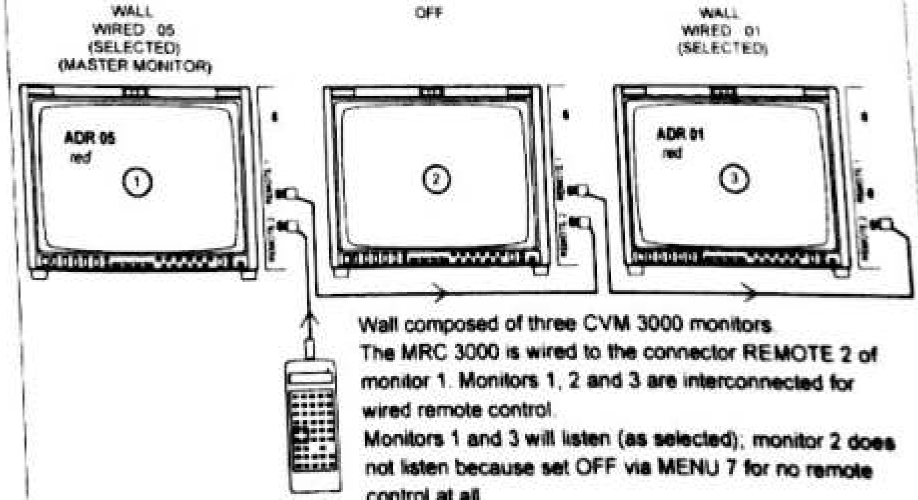
Some applications of CVM 3000 wall control

The following illustrations are given to illustrate the many possibilities but may not always be realistic situations.



Wall composed of three CVM 3000 monitors.
The MRC 3000 transmits infrared to monitor 1.
Monitors 1, 2 and 3 are interconnected for wired remote control.
Monitors 1 and 3 will listen (as selected); monitor 2 does not listen.

Application 1



Wall composed of three CVM 3000 monitors.
The MRC 3000 is wired to the connector REMOTE 2 of monitor 1. Monitors 1, 2 and 3 are interconnected for wired remote control.
Monitors 1 and 3 will listen (as selected); monitor 2 does not listen because set OFF via MENU 7 for no remote control at all.

Application 2

Teletext TV / TXT

Via the monitor control panel, Teletext operation is limited to page selection (via MENU/8 /1).
The MRC 3000 adds Teletext operation features.

TV/TXT
For switching between TV (full screen displayed VIDEO or RF input) and Teletext mode. When going into Teletext, Page 100 is displayed first.

HOLD
Stops the page scanning and freezes the actually displayed page or subpage.

MIXED
Shows the video or RF input with on top the blanked in Teletext Header line.

REVEAL/CONCEAL HIDDEN INFORMATION
Shows or hides Hidden Information.

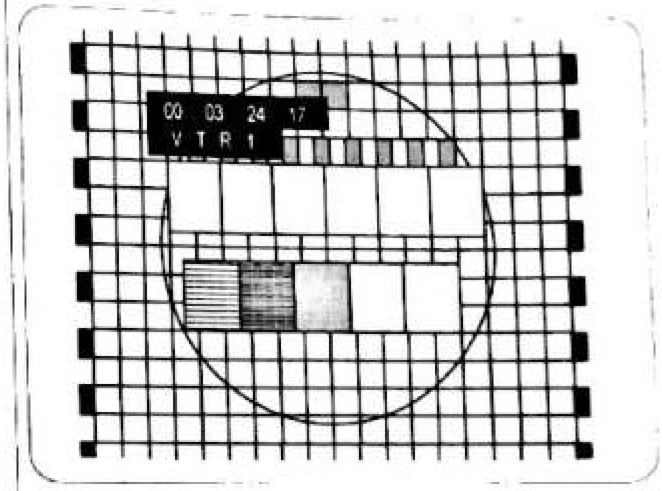
DOUBLE HEIGHT
Keys to switch between Double Height / Normal Height Character display and between Upper / Lower Page Half display in the Double Height mode.

INDEX
Key to select Page 100.

Refer also to the description of the TELETEXT Menu (MENU/8/1) of the CVM 3000.

VITC and SOURCE IDENTIFICATION

If equipped with the VITC option, the CVM 3000 can display VITC and DVITC Time Codes and their User bits (4 bytes). The display of User bits is called here the Source Identification or Source ID



VITC display is controlled by means of four Functions which are normally available in the Function Mode and visible in the Function Table (press **FUNC** and eventually **TOGL** to see them).
If they are not visible, there can be two reasons for it
there is no VITC decoder in the monitor or
they are not configured as Functions via MENU 4/3

The four VITC functions are :

TIME CODE
To switch ON/OFF the Time Code display.

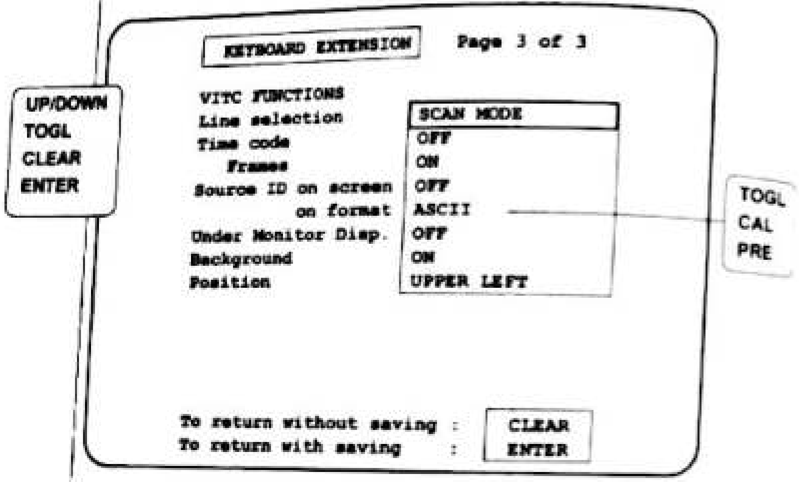
SOURCE ID
To switch ON/OFF the Source Identification.

BACKGROUND
To switch ON/OFF the Background of the displayed characters. Background is Blanking out the displayed live picture at the location of the characters.

POSITION
To set the position of Time Code and Source ID.
The options are :
UPPER LEFT, UPPER CENTER, UPPER RIGHT,
DOWN LEFT, DOWN CENTER, DOWN RIGHT

More VITC display parameters can be programmed and operated via the Keyboard Extension MENU 2.

On Page 3 of 3 of this menu (use **UP** or **DOWN** to arrive into page 3) are displayed the VITC Functions. They are only visible when a VITC decoder is inside the monitor.



```
KEYBOARD EXTENSION     Page 3 of 3

VITC FUNCTIONS
Line selection           SCAN MODE
Time code                OFF
   Frames                ON
Source ID on screen      OFF
          on format      ASCII
Under Monitor Disp.      OFF
Background               ON
Position                 UPPER LEFT

To return without saving :  CLEAR
To return with saving    :  ENTER
```

The VITC Functions are :

Line selection
Selection of the (D)VITC and Source ID information line.
Options are :

`SCAN MODE`
Automatic scanning of the (D)VITC information line.
When going into VITC display mode, the VITC decoder starts to scan for VITC information from the line number where was detected information in the previous session.

`LINE 10 ... LINE 25`
To force VITC and Source ID detection on a well defined line between 10 and 25.
Use the **TOGL** key to go up one line number.
Keys **CAL** and **PRE** let you go up and down one line.

Time code
To set ON/OFF the Time Code display.
An other way to do it, is via TIME CODE in Function Mode.

Frames
To switch ON/OFF the display of the actual Frame number.
There is no equivalent function in Function Mode for this.

Source ID on screen
To switch ON/OFF the display of the User bits on the monitor screen.
Another way is to do it, is via SOURCE ID in Function Mode.
This Source ID is displayed under the Time Code.
There are two options

`OFF`
For no display of the Source ID on the monitor screen.
`ON`
To show the Source ID on the monitor screen.

Source ID in format
To select the text format of the Source ID. Options are

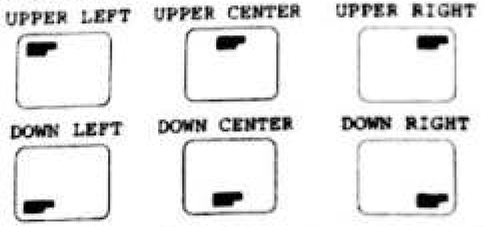
`ASCII`
To show the Source ID in ASCII format. (e.g. V T R 1)
`HEXADECIMAL`
To show the Source ID in hexadecimal format
(e.g. 56 54 52 31)

Under Monitor Display
To set ON/OFF the transmission of data to display the Source ID on an Under Monitor Display *)

`ASCII`
To show the Source ID in ASCII format. (e.g. V T R 1)
`HEXADECIMAL`
To show the Source ID in hexadecimal format
(e.g. 56 54 52 31)

Background
To switch ON/OFF the Background of the displayed characters. Background is the blanking of the displayed live picture at the location of the characters.

Position
To set the position of Time Code and Source ID.
The options are



---

*) The CVM 3000 provides the interfacing with an Under Monitor Display through the REMOTE 1 connector.

DIGITAL INPUT OPERATION

If equipped with the optional Digital Input Module, the monitor has additional connectors on the rear side :

SERIAL INPUT A (always)
Internally 75 ohms terminated serial digital input with an active loop-through output.
BNC type connectors.
CCIR Recommendation 601.

SERIAL INPUT B (only when 2-input option D2S is installed)
Specifications as SERIAL INPUT A.

Operation

To select a digital input, go into VIDEO mode by pressing the **VIDEO** key. The digital input(s) is (are) then visible in the inputs table as SERIAL A (and SERIAL B).

The number of the input(s) and eventual identification name(s) can be given via MENU/4/1 (VIDEO CONFIGURATION).

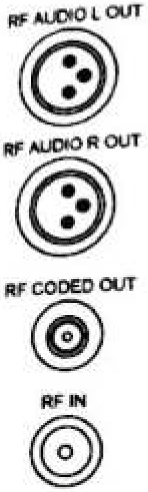
Additional features compared to analog inputs

SAD *(Safe Area Display)*
Two vertical lines show the 4/3 limits on a 16/9 picture.
SAD is a FUNCtion and is factory set in Function TABLE A as FUNC 4. It can of course be moved to another place or another Table.

On the Digital Input module is available a digital **Internal White Field** generator for colour temperature alignments. This digital generator needs a serial digital input signal (content is of no importance) at the selected digital input to be clocked correctly.

When no signal is applied to the selected digital input, a green background is normally visible. This is no fault.

RF MODE



If equipped with an RF Input Module, the monitor has following additional connectors from top to bottom :

RF AUDIO L OUT and RF AUDIO R OUT
Volume controlled audio outputs
RF CODED OUT
Composite video output
RF IN
RF input

The demodulated RF signal is always available on the output connectors, even if the monitor is not in RF mode.
When equipped with the optional RF Module, the CVM 3000 monitor can receive up to 64 different programmes.

Operation

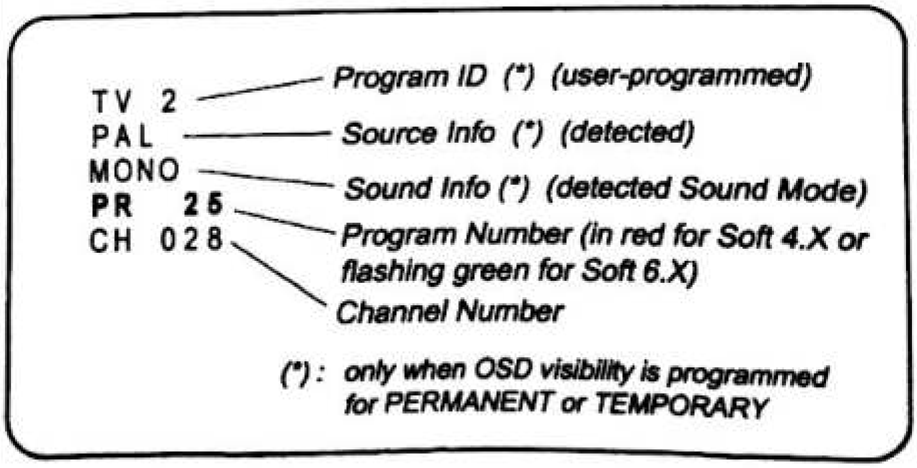
Go into RF mode by pressing the **RF** key.
When working with an SMRC or MMRC Remote Controller, press **INPUT 9** .

When the **RF** key is pressed, a LED above it goes on, and a text appears on the screen for a few seconds to show the selected Programme or Channel.

You can select by Programme or by Channel. How you select is marked on the screen in red (Soft 4.X) or flashing green (Soft 6.X) characters while the rest remains in fixed green characters.
How you select, by programmes or by channels, is modified or choosen pressing the **TOGL** key.
In both methods, you select by entrance of a number or by scrolling through the available programmes or channels by means of **UP/DOWN**.

Programme Selection

When in Programme Selection mode, a text as follows appears on the screen (e.g.) :

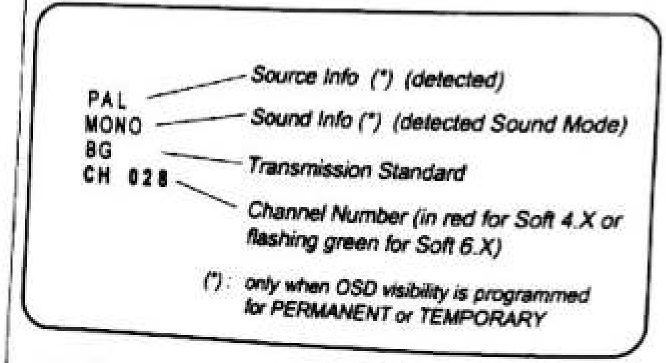

TV 2
PAL
MONO
PR 25
CH 028
Program ID (*) (user-programmed)
Source Info (*) (detected)
Sound Info (*) (detected Sound Mode)
Program Number (in red for Soft 4.X or flashing green for Soft 6.X)
Channel Number
(*) : only when OSD visibility is programmed for PERMANENT or TEMPORARY

Five lines of text can be displayed :

Program ID : when an identification name has been given to the programme, this name becomes also visible. The name is maximum 4 characters wide.
Source Info : detected colour system, displayed as PAL, SECAM, NTSC3, NTSC4, NO COLOR or NO SYNC.
Sound Info (detected **Sound Mode**) : MONO, STEREO or DUAL SOUND, DIGITAL MONO, DIGITAL STEREO, DIGITAL DUAL SOUND or NO SOUND.
The sound mode is constantly detected.
This text line for Sound Info appears somewhat later on the screen than the other text lines to permit a reliable detection.
Program Number : number between 1 and 64 in red (Soft 4.X) or flashing green (Soft 6.X) showing the actual programme or the programme number you are entering.
To select another programme :
from 1 to 9 : press the corresponding key (**1** to **9**) ,
from 10 to 64 : press first **0/--** and then the 2-figure programme number with the keys **0**, **1** ... **9**.
Channel Number : 3-figure channel number.

Channel selection

When in Channel Selection mode, a text as follows appears on the screen (e.g.) :


PAL
MONO
BG
CH 028
Source Info (*) (detected)
Sound Info (*) (detected Sound Mode)
Transmission Standard
Channel Number (in red for Soft 4.X or flashing green for Soft 6.X)
(*) : only when OSD visibility is programmed for PERMANENT or TEMPORARY

Four lines of text can be displayed :

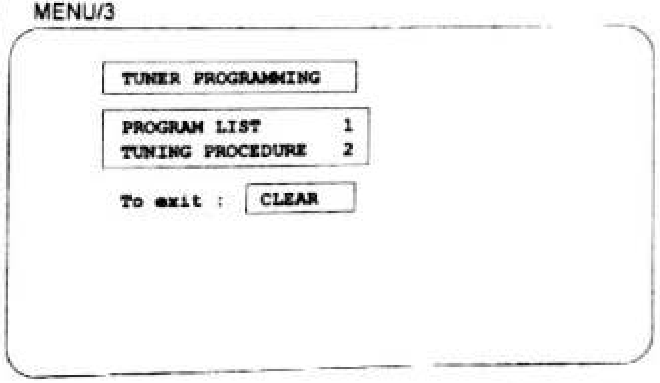
Source Info : detected colour system, displayed as PAL, SECAM, NTSC3, NTSC4, NO COLOR or NO SYNC.
Sound Info (detected **Sound Mode**) : MONO, STEREO or DUAL SOUND, DIGITAL MONO, DIGITAL STEREO, DIGITAL DUAL SOUND or NO SOUND.
The sound mode is constantly detected.

This text line for Sound Info appears somewhat later on the screen than the other text lines to permit a reliable detection.
Transmission Standard : BG,
The transmission standard can not be modified here and is the one from the previously selected channel (or programme).
To have another transmission standard, you have to select first a programme (in Programme Selection mode) with the desired standard. Find such a programme via the Program List (see below).
Channel number : 3-character channel number to be entered by means of the numeric keys **0**, **1** ... **9**.

Tuner Programming

The 64 available programmes can be tuned and programmed via MENU 3 called TUNER PROGRAMMING
Press **MENU 3** and you get this menu on the screen :

MENU/3



```
TUNER PROGRAMMING

PROGRAM LIST        1
TUNING PROCEDURE    2

To exit :  CLEAR
```

Press **1** for PROGRAM LIST to get a table subdivided in 2 pages of the 64 available programmes and their settings. You can also modify via this list items such as Channel Number, Transmission Standard and Program ID.

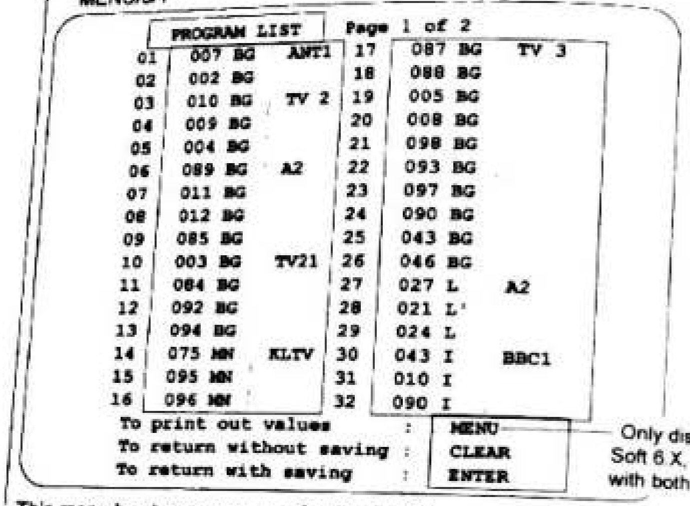
Press **2** for TUNING PROCEDURE to :

tune to the available RF stations and assign Program Numbers and IDs to them;
fine tune an already tuned programme.

More on the following pages.

Program List

MENU/3/1



```
 PROGRAM LIST          Page 1 of 2
01   007 BG   ANT1  17   087 BG   TV 3
02   002 BG         18   088 BG
03   010 BG   TV 2  19   005 BG
04   009 BG         20   008 BG
05   004 BG         21   098 BG
06   089 BG   A2    22   093 BG
07   011 BG         23   097 BG
08   012 BG         24   090 BG
09   085 BG         25   043 BG
10   003 BG   TV21  26   046 BG
11   084 BG         27   027 L    A2
12   092 BG         28   021 L'
13   094 BG         29   024 L
14   075 MN   KLTV  30   043 I    BBC1
15   095 MN         31   010 I
16   096 MN         32   090 I
 To print out values        :  MENU
 To return without saving   :  CLEAR
 To return with saving      :  ENTER
```

Only displayed wi Soft 6.X, but possib with both 4.X and 6.

This menu has two pages, one for the first 32 programmes and a second one for the other programmes 33 to 64. To switch between pages, set the red field on top of the page (or at the bottom) and press **UP** (or **DOWN**).

Channel Number and Transmission Standard entrance

Press **UP** or **DOWN** to select the programme's channel and transmission standard on one hand or the Program IDs on the other.

Use the numeric keys on the keyboard to set the channel number.

Use the **TOGL** key to set the Transmission Standard (BG / ...).

Program ID entrance

Each input can be assigned a 4-character name.

Move the red field by means of the keys **UP** and **DOWN** to the programme to be named (right field).

Use the **PRE** and **CAL** keys to enter or modify a character.

Available characters are :

PRE <-_0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ -> **CAL**

Use **TOGL** to move the cursor to the right or back to the beginning. Four characters can be entered for names as ANT1, BBC2, ... After having been saved, the entered ID(s) will become visible in the RF selection mode.

Print out (on Sofware 4.X and 6.X)

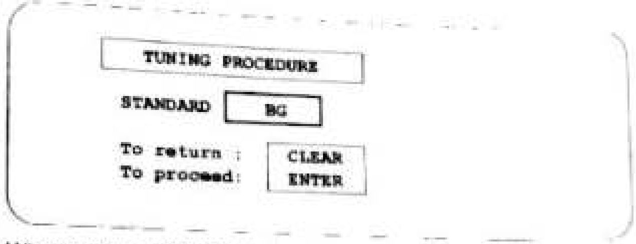
Press **MENU** to print out the visible Program List page via REMOTE 1 (output pin 7 for data and 6 for ground). The printer should be RS-232C compatible and set for 4800 baud rate.

Tuning Procedure

When tuning to a channel, you first select the Transmission Standard.

In the red field appears the Transmission Standard which can be modified pressing **TOGL** to BG, I, L, L', MN or DK.

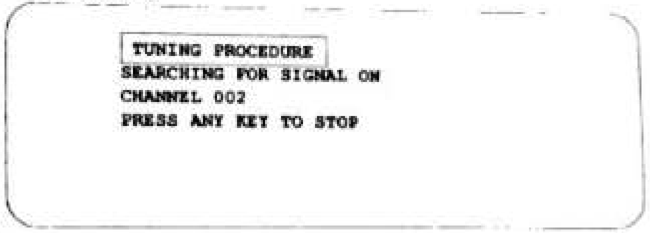
MENU/3/2



```
TUNING PROCEDURE

STANDARD  BG

To return :   CLEAR
To proceed:   ENTER
```

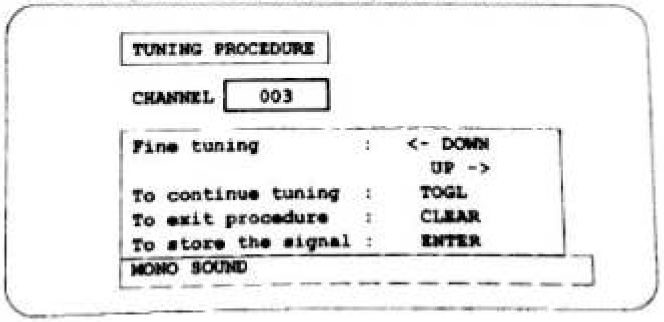
When pressing **ENTER** , tuning starts immediately from channel 001 and stops at the first encountered channel-with-signal with screens as follow (e.g.)

During tuning



```
TUNING PROCEDURE
SEARCHING FOR SIGNAL ON
CHANNEL 002
PRESS ANY KEY TO STOP
```

After tuning, when a channel-with-signal has been found



```
TUNING PROCEDURE

CHANNEL  003

Fine tuning             :   <- DOWN
                              UP ->
To continue tuning      :   TOGL
To exit procedure       :   CLEAR
To store the signal     :   ENTER
MONO SOUND
```

During tuning, the Channel Number is displayed.

Tuning can be stopped pressing any key.

When in Tuning Procedure, the controls **CON**, **BRI**, **SAT**, **HUE** and **VOL** are available, but the actual value is not displayed. Remark that when leaving Tuning Procedure, the controls remain as set during tuning.

When a channel is found, you can go different ways :

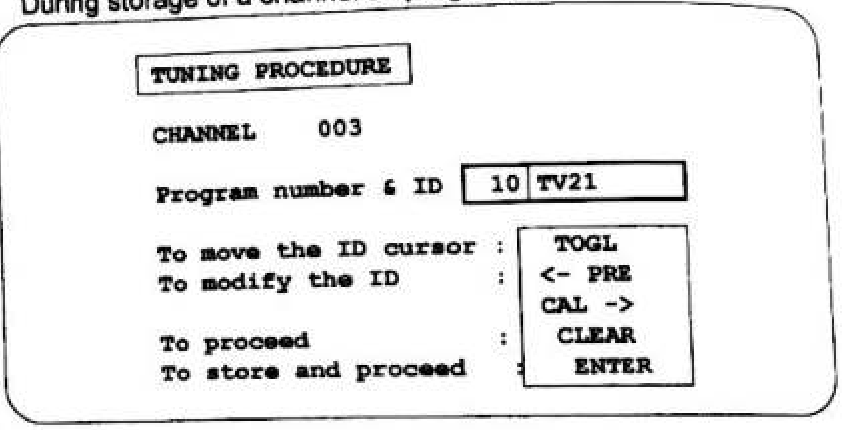
Fine tune the channel pressing **UP/ DOWN** .

Continue tuning to the following channel with **TOGL** or go immediately to a channel (e.g. for fine tuning of an already stored programme) entering the channel number by means of the numeric keys.

Exit the Tuning Procedure with **CLEAR** .

Store the found channel as a programme as follows pressing **ENTER** .

During storage of a channel as programme :



```
TUNING PROCEDURE

CHANNEL     003

Program number & ID  | 10 |TV21   |

To move the ID cursor :  TOGL
To modify the ID      :  <- PRE
                         CAL ->

To proceed            :  CLEAR
To store and proceed  :   ENTER
```

You can assign a Program Number and a Program ID to the channel. If you hesitate about numbers or IDs already used, press **UP/DOWN** to scroll through the programmes with their Program Numbers and IDs, or refer to the Program List of the monitor (MENU/3/1).

Enter the Program Number by means of the numeric keys.

Enter the Program ID (Identification Name) as follows :

Use the **PRE** and **CAL** keys to enter or modify a character.

Available characters are :

PRE<- `_0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ` ->CAL

Use **TOGL** to move the cursor to the right or back to the beginning. Four characters can be entered for names as `ANT1`, `BBC2`, ... After having been saved, the entered name(s) will become visible in the RF selection mode.

To proceed without storing this channel as a programme, press **CLEAR** .

To store the channel as a programme with its Program Number and eventually a Program ID, press ENTER. Tuning continues then to find the following channel.

CVM 3000 channels : Channel – Vision Carrier – Band

Ch.	BG	Band (BG)	DK	Band (DK)	I	BAND (I)	L	BAND (L)	MN	Band (MN)
1	046.250	low VHF	049.750	low VHF						
2	048.250	low VHF	059.250	low VHF	045.750	low VHF	055.750	low VHF	055.250	low VHF
3	055.250	low VHF	077.250	low VHF	053.750	low VHF	060.500	low VHF	061.250	low VHF
4	062.250	low VHF	085.250	low VHF	061.750	low VHF	063.750	low VHF	067.250	low VHF
5	175.250	high VHF	093.250	low VHF	175.250	high VHF	176.000	high VHF	077.250	low VHF
6	182.250	high VHF	175.250	high VHF	183.250	high VHF	184.000	high VHF	083.250	low VHF
7	189.250	high VHF	183.250	high VHF	191.250	high VHF	192.000	high VHF	175.250	high VHF
8	196.250	high VHF	191.250	high VHF	199.250	high VHF	200.000	high VHF	181.250	high VHF
9	203.250	high VHF	199.250	high VHF	207.250	high VHF	208.000	high VHF	187.250	high VHF
10	210.250	high VHF	207.250	high VHF	215.250	high VHF	216.000	high VHF	193.250	high VHF
11	217.250	high VHF	215.250	high VHF	223.250	high VHF	189.250	high VHF	199.250	high VHF
12	224.250	high VHF	223.250	high VHF	057.250	low VHF	060.750	low VHF	205.250	high VHF
13	053.750	low VHF			065.250	low VHF	068.750	low VHF	211.250	high VHF
14	062.250	low VHF			073.250	low VHF	076.750	low VHF	471.250	UHF
15	082.250	low VHF			081.250	low VHF	084.750	low VHF	477.250	UHF
16	175.250	high VHF			089.250	low VHF	092.750	low VHF	483.250	UHF
17	183.750	high VHF			097.250	low VHF	100.750	low VHF	489.250	UHF
18	192.250	high VHF			105.250	low VHF	108.750	low VHF	495.250	UHF
19	201.250	high VHF							501.250	UHF
20	210.250	high VHF							507.250	UHF
21	471.250	UHF	471.250	UHF	471.250	UHF	471.250	UHF	513.250	UHF
22	479.250	UHF	479.250	UHF	479.250	UHF	479.250	UHF	519.250	UHF
23	487.250	UHF	487.250	UHF	487.250	UHF	487.250	UHF	525.250	UHF
24	495.250	UHF	495.250	UHF	495.250	UHF	495.250	UHF	531.250	UHF
25	503.250	UHF	503.250	UHF	503.250	UHF	503.250	UHF	537.250	UHF
26	511.250	UHF	511.250	UHF	511.250	UHF	511.250	UHF	543.250	UHF
27	519.250	UHF	519.250	UHF	519.250	UHF	519.250	UHF	549.250	UHF
28	527.250	UHF	527.250	UHF	527.250	UHF	527.250	UHF	555.250	UHF
29	535.250	UHF	535.250	UHF	535.250	UHF	535.250	UHF	561.250	UHF
30	543.250	UHF	543.250	UHF	543.250	UHF	543.250	UHF	567.250	UHF
31	551.250	UHF	551.250	UHF	551.250	UHF	551.250	UHF	573.250	UHF
32	559.250	UHF	559.250	UHF	559.250	UHF	559.250	UHF	579.250	UHF
33	567.250	UHF	567.250	UHF	567.250	UHF	567.250	UHF	585.250	UHF
34	575.250	UHF	575.250	UHF	575.250	UHF	575.250	UHF	591.250	UHF
35	583.250	UHF	583.250	UHF	583.250	UHF	583.250	UHF	597.250	UHF
36	591.250	UHF	591.250	UHF	591.250	UHF	591.250	UHF	603.250	UHF
37	599.250	UHF	599.250	UHF	599.250	UHF	599.250	UHF	609.250	UHF
38	607.250	UHF	607.250	UHF	607.250	UHF	607.250	UHF	615.250	UHF
39	615.250	UHF	615.250	UHF	615.250	UHF	615.250	UHF	621.250	UHF
40	623.250	UHF	623.250	UHF	623.250	UHF	623.250	UHF	627.250	UHF
41	631.250	UHF	631.250	UHF	631.250	UHF	631.250	UHF	633.250	UHF
42	639.250	UHF	639.250	UHF	639.250	UHF	639.250	UHF	639.250	UHF
43	647.250	UHF	647.250	UHF	647.250	UHF	647.250	UHF	645.250	UHF
44	655.250	UHF	655.250	UHF	655.250	UHF	655.250	UHF	651.250	UHF
45	663.250	UHF	663.250	UHF	663.250	UHF	663.250	UHF	657.250	UHF
46	671.250	UHF	671.250	UHF	671.250	UHF	671.250	UHF	663.250	UHF
47	679.250	UHF	679.250	UHF	679.250	UHF	679.250	UHF	669.250	UHF
48	687.250	UHF	687.250	UHF	687.250	UHF	687.250	UHF	675.250	UHF
49	695.250	UHF	695.250	UHF	695.250	UHF	695.250	UHF	681.250	UHF
50	703.250	UHF	703.250	UHF	703.250	UHF	703.250	UHF	687.250	UHF

CVM 3000 channels : Channel – Vision Carrier – Band

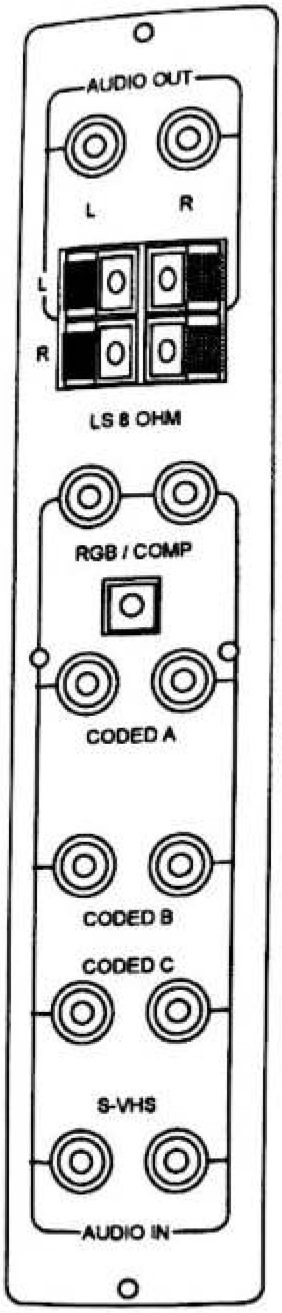
Ch	BG	Band (BG)	DK	Band (DK)	I	BAND (I)	L	BAND (L)	MN	Band (MN)
51	711.250	UHF	711.250	UHF	711.250	UHF	711.250	UHF	693.250	UHF
52	719.250	UHF	719.250	UHF	719.250	UHF	719.250	UHF	699.250	UHF
53	727.250	UHF	727.250	UHF	727.250	UHF	727.250	UHF	705.250	UHF
54	735.250	UHF	735.250	UHF	735.250	UHF	735.250	UHF	711.250	UHF
55	743.250	UHF	743.250	UHF	743.250	UHF	743.250	UHF	717.250	UHF
56	751.250	UHF	751.250	UHF	751.250	UHF	751.250	UHF	723.250	UHF
57	759.250	UHF	759.250	UHF	759.250	UHF	759.250	UHF	729.250	UHF
58	767.250	UHF	767.250	UHF	767.250	UHF	767.250	UHF	735.250	UHF
59	775.250	UHF	775.250	UHF	775.250	UHF	775.250	UHF	741.250	UHF
60	783.250	UHF	783.250	UHF	783.250	UHF	783.250	UHF	747.250	UHF
61	791.250	UHF	791.250	UHF	791.250	UHF	791.250	UHF	753.250	UHF
62	799.250	UHF	799.250	UHF	799.250	UHF	799.250	UHF	759.250	UHF
63	807.250	UHF	807.250	UHF	807.250	UHF	807.250	UHF	765.250	UHF
64	815.250	UHF	815.250	UHF	815.250	UHF	815.250	UHF	771.250	UHF
65	823.250	UHF	823.250	UHF	823.250	UHF	823.250	UHF	777.250	UHF
66	831.250	UHF	831.250	UHF	831.250	UHF	831.250	UHF	783.250	UHF
67	839.250	UHF	839.250	UHF	839.250	UHF	839.250	UHF	789.250	UHF
68	847.250	UHF	847.250	UHF	847.250	UHF	847.250	UHF	795.250	UHF
69	855.250	UHF	855.250	UHF	855.250	UHF	855.250	UHF	801.250	UHF
70	863.250	UHF			863.250	UHF	863.250	UHF	807.250	UHF
71	871.250	UHF							813.250	UHF
72	879.250	UHF							819.250	UHF
73	887.250	UHF							825.250	UHF
74	069.250	low VHF							831.250	UHF
75	076.250	low VHF							837.250	UHF
76	083.250	low VHF							843.250	UHF
77	090.250	low VHF							849.250	UHF
78	097.250	low VHF							855.250	UHF
79	055.750	low VHF							861.250	UHF
80	105.250	low VHF			105.250	low VHF	116.750	low VHF	867.250	UHF
81	112.250	low VHF	103.250	low VHF	112.250	low VHF	128.750	low VHF	873.250	UHF
82	119.250	low VHF	111.250	low VHF	119.250	low VHF	140.750	low VHF	879.250	UHF
83	126.250	low VHF	119.250	low VHF	126.250	low VHF	152.750	low VHF	885.250	UHF
84	133.250	low VHF	127.250	low VHF	133.250	low VHF	164.750	low VHF	121.250	low VHF
85	140.250	low VHF	135.250	low VHF	140.250	low VHF	176.750	high VHF	127.250	low VHF
86	147.250	low VHF	143.250	low VHF	147.250	low VHF	188.750	high VHF	133.250	low VHF
87	154.250	low VHF	151.250	low VHF	154.250	low VHF	200.750	high VHF	139.250	low VHF
88	161.250	low VHF	159.250	low VHF	161.250	low VHF	212.750	high VHF	145.250	low VHF
89	168.250	low VHF	167.250	low VHF	168.250	low VHF	224.750	high VHF	151.250	low VHF
90	231.250	high VHF	231.250	high VHF	231.250	high VHF	236.750	high VHF	157.250	low VHF
91	238.250	high VHF	239.250	high VHF	238.250	high VHF	248.750	high VHF	163.250	low VHF
92	245.250	high VHF	247.250	high VHF	245.250	high VHF	260.750	high VHF	169.250	low VHF
93	252.250	high VHF	255.250	high VHF	252.250	high VHF	272.750	high VHF	217.250	high VHF
94	259.250	high VHF	263.250	high VHF	259.250	high VHF	284.750	high VHF	223.250	high VHF
95	266.250	high VHF	271.250	high VHF	266.250	high VHF	296.750	high VHF	229.250	high VHF
96	273.250	high VHF	279.250	high VHF	273.250	high VHF			235.250	high VHF
97	280.250	high VHF	287.250	high VHF	280.250	high VHF			241.250	high VHF
98	287.250	high VHF	295.250	high VHF	287.250	high VHF			247.250	high VHF
99	294.250	high VHF	303.250	high VHF	294.250	high VHF			253.250	high VHF
100	168.250	high VHF			168.250	high VHF			259.250	high VHF

– Vision Carrier – Band

Ch	BG	Band (BG)	DK	Band (DK)	I	BAND (I)	L	BAND (L)	MN	Band (MN)
101	303.250	high VHF	303.250	high VHF	303.250	high VHF	303.250	high VHF	265.250	high VHF
102	311.250	high VHF	311.250	high VHF	311.250	high VHF	311.250	high VHF	271.250	high VHF
103	319.250	high VHF	319.250	high VHF	319.250	high VHF	319.250	high VHF	277.250	high VHF
104	327.250	high VHF	327.250	high VHF	327.250	high VHF	327.250	high VHF	283.250	high VHF
105	335.250	high VHF	335.250	high VHF	335.250	high VHF	335.250	high VHF	289.250	high VHF
106	343.250	high VHF	343.250	high VHF	343.250	high VHF	343.250	high VHF	295.250	high VHF
107	351.250	high VHF	351.250	high VHF	351.250	high VHF	351.250	high VHF	301.250	high VHF
108	359.250	high VHF	359.250	high VHF	359.250	high VHF	359.250	high VHF	307.250	high VHF
109	367.250	high VHF	367.250	high VHF	367.250	high VHF	367.250	high VHF	313.250	high VHF
110	375.250	high VHF	375.250	high VHF	375.250	high VHF	375.250	high VHF	319.250	high VHF
111	383.250	high VHF	383.250	high VHF	383.250	high VHF	383.250	high VHF	325.250	high VHF
112	391.250	high VHF	391.250	high VHF	391.250	high VHF	391.250	high VHF	331.250	high VHF
113	399.250	high VHF	399.250	high VHF	399.250	high VHF	399.250	high VHF	337.250	high VHF
114	407.250	high VHF	407.250	high VHF	407.250	high VHF	407.250	high VHF	343.250	high VHF
115	415.250	high VHF	415.250	high VHF	415.250	high VHF	415.250	high VHF	349.250	high VHF
116	423.250	high VHF	423.250	high VHF	423.250	high VHF	423.250	high VHF	355.250	high VHF
117	431.250	high VHF	431.250	high VHF	431.250	high VHF	431.250	high VHF	361.250	high VHF
118	439.250	high VHF	439.250	high VHF	439.250	high VHF	439.250	high VHF	367.250	high VHF
119	447.250	high VHF	447.250	high VHF	447.250	high VHF	447.250	high VHF	373.250	high VHF
120	455.250	UHF	455.250	UHF	455.250	UHF	455.250	UHF	379.250	high VHF
121	463.250	UHF	463.250	UHF	463.250	UHF	463.250	UHF	385.250	high VHF
122									391.250	high VHF
123									397.250	high VHF
124									403.250	high VHF
125									409.250	high VHF
126									415.250	high VHF
127									421.250	high VHF
128									427.250	high VHF
129									433.250	high VHF
130									439.250	high VHF
131									445.250	high VHF
132									451.250	high VHF
133									457.250	UHF
134									463.250	UHF
135									469.250	UHF

AUDIO INPUT : INPUTS & OUTPUTS

If equipped with the optional Audio Input Module, the monitor has following additional connectors on the rear side :



Audio Outputs

AUDIO OUT L & R

Cinch connectors for the audio output signal of the selected input (VIDEO or RF).

The output signal is always VOLUME, BASS and TREBLE controlled. The normal application is connection to an active loudspeaker system.

AUDIO OUT LS 8 OHM L & R

2 x 10 W and 8 ohms loudspeaker output terminals. Audio output signal corresponds to the selected input (VIDEO or RF).

The output is always VOLUME, BASS and TREBLE controlled. The normal application is connection to passive loudspeakers.

WARNING !

To safeguard the radio frequency interference performance of the unit, connection cables between monitor and loudspeakers must be shorter than 2 meters.

ACHTUNG !

Damit die Störstrahlungseigenschaften dieses Gerätes nicht überschritten werden, dürfen die Verbindungskabel zwischen Monitor und Lautsprechern nicht länger als 2 Meter sein.

Notes :

When an Audio Input module is installed inside the monitor, the audio output of the HF Input module (if any) is always fixed in volume.

The **MUTE** function (only available via the MRC 3000 Infrared controller) acts on the outputs which are volume controlled, not on the outputs which are fixed.

Audio Inputs

RGB / COMP AUDIO IN (for RGB and COMPonent inputs)
CODED A AUDIO IN
CODED B AUDIO IN
CODED C AUDIO IN
S-VHS AUDIO IN

Each analog video input has its own corresponding L(eft) and R(ight) audio inputs. It are pairs of cinch connectors, with 0.5 V_{RMS} asymetric and high impedance inputs.

AUDIO INPUT OPERATION

Input Selection

Audio inputs are selected together with their corresponding analog video inputs. To select an analog input, go into VIDEO mode by pressing the **VIDEO** key. The inputs are then visible in the input tables as CODED A, CODED B, CODED C, RGB, COMP and S-VHS.

Additional Controls

Three control functions act on the audio outputs of the Audio Input module : VOLUME, BASS and TREBLE. Their control ranges are from 050 (minimum) to 200 (maximum).

There are no CALibrated values for VOLUME, BASS and TREBLE. So, pressing **CAL** does not alter the settings of these controls.

There is however a PREset value for VOLUME, but not for BASS and TREBLE. So, when pressing **PRE**, the VOLUME is set to its preset value and the actual BASS and TREBLE do not change.

Note that the MRC 3000 **MUTE** function can switch on/off the sound output of the Audio Module.

Additional Functions

SOUND MODE

Available via the **FUNC** key and having following options :

AUTOMATIC (the HF Input module controls the Sound Mode)

FORCED MONO (useful when only 1 loudspeaker available)

FORCED DUAL SOUND (useful when the audio signal comes from an external source (not the internal HF Input)

DUAL SOUND

Available via the **FUNC** key and having following options :

SOUND 1
SOUND 2

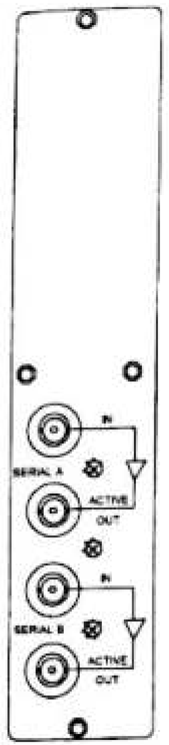
Additional RIS options

When the Audio Input is installed, there are four additional options available for the RIS switches :

SOUND AUTOMATIC - FORCED MONO
SOUND AUTOMATIC - FORCED DUAL
FORCED MONO - FORCED DUAL
SOUND 1 - SOUND 2

Note : there are no additional items in the Keyboard Extension.

10-bit DIGITAL INPUT OPERATION



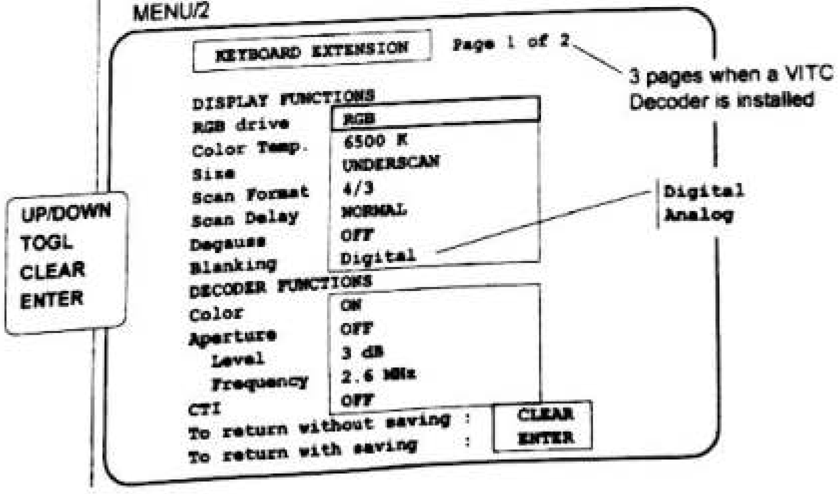
Additional or modified features with the 10-bit Digital Input

1 When installed and after pressing the **VIDEO** key, the digital input(s) is (are) visible in the inputs table as SERIAL A (and SERIAL B). An identification name can be given as well as to the other inputs. Refer to the CVM 3000 User Manual section on VIDEO MODE and MENU 4/1 VIDEO CONFIGURATION.

2 On the Digital Input module is available a digital **Internal White Field** generator for colour temperature alignments. This digital generator needs a serial digital input signal at the selected digital input to be clocked correctly (content has no importance). This digital Internal White Field becomes visible on the screen in the MENU/6 Alignment modes with INTERNAL SIGNAL when a Digital Input is selected.
Note that the White Field which you see on the MENU/6/9 Service Pages 7 (SCAN MATCHING) and 8 (WHITE FIELD) are always "analog" White Fields.

3 **Blanking**
The 10-bit Digital Input module processes the signal digitally so that two blanking options are available. Refer to the Specifications section of this Manual for more details.
Selection is via MENU/(8/)2 KEYBOARD EXTENSION where there is an addtional item when a digital input is selected : `Blanking` with options `Digital` (factory set) and `Analog`.
When you select `Digital`, you see the whole digital video signal, while with `Analog`, you see only that part which corresponds to an analog video format.

MENU/2



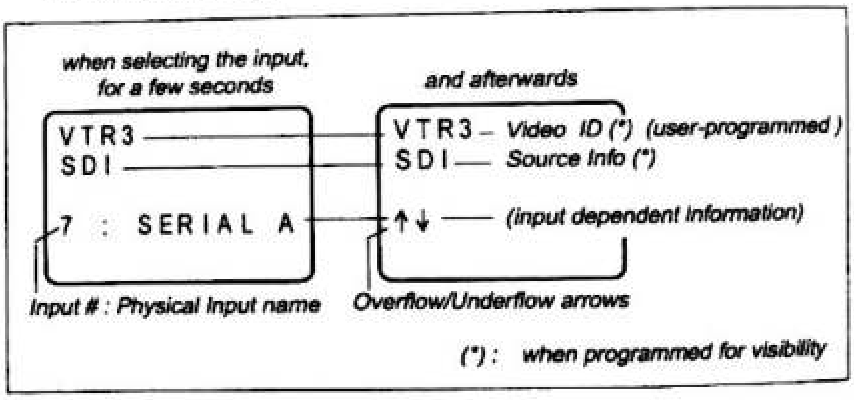
```
     KEYBOARD EXTENSION        Page 1 of 2

  DISPLAY FUNCTIONS
  RGB drive          RGB
  Color Temp.        6500 K
  Size               UNDERSCAN
  Scan Format        4/3
  Scan Delay         NORMAL
  Degauss            OFF
  Blanking           Digital
  DECODER FUNCTIONS
  Color              ON
  Aperture           OFF
    Level            3 dB
    Frequency        2.6 MHz
  CTI                OFF
  To return without saving  :   CLEAR
  To return with saving     :   ENTER
```

5 Display of Invalid Colors

With this 10-bit Digital Input, the monitor also displays the so-called Invalid Colours.
Invalid colours are colours which after transformation from another format to RGB result in illegal signals.
These Invalid Colour areas are not only displayed but can also be identified in two ways :

Overflow/Underflow arrows in OSD (On-Screen-Display),
Flashing area of Invalid Colour.

Therefor is available an additional FUNCtion "INVALID COLOUR". This Function is factory placed on TABLE A as FUNC 4 but can be user-moved to other locations in the Function Tables. It is an ON/OFF Function which is factory first set for OFF.
The green Overflow/Underflow arrows appear at the location where Input number and VIDEO ID are displayed.
An upwards arrow means a signal Overflow, and a downwards arrow means a signal Underflow. Both can be present.


when selecting the input, for a few seconds
and afterwards
VTR3
SDI
7 : SERIAL A
VTR3 – Video ID (*) (user-programmed)
SDI — Source Info (*)
↑↓ — (input dependent information)
Input # : Physical Input name
Overflow/Underflow arrows
(*) : when programmed for visibility

The Invalid Colour areas are also identified in the picture itself. They are made flashing – which is a brightness modulation.

6 When no signal is applied to the selected Digital Input, the deflection of the monitor takes as reference the external sync applied to the ANALOG INPUT module.

C V M 3000

Quick Reference Guide (Software 3.X)

Edition : 3 January 1996

POWER ON/OFF : to turn ON/OFF the monitor (for CVM 3$^{1}_{8}$00 on rear side).

(BRAND NAME) : key for Back Light ON/OFF switching.

CON BRI SAT HUE VOL : Control Function Keys
To control values between 050 (min) and 200 (max).
The calibrated value is 100 except for VOLume.

CAL & PRE : keys to set the status of the monitor.
CAL : calibrated status of the monitor to show a normal picture with all controls in their mid or calibrated position.
PRESET : preset status of the monitor as programmed for the active input
Setting the PRESET of a VIDEO or RF input :
method 1 : set picture to your liking and then select **MENU 5** , **TOGL** for STATUS and **ENTER**.
method 2 : Select **MENU 5** , **TOGL** for the PRESET table and with **UP/DOWN** and the numeric keys modify value(s) and finally **ENTER**.
PRESET FOLLOW VIDEO OR RF (options NO / YES) : set via MENU 4
if set NO : the monitor keeps its status when another input (VIDEO or RF) is selected. NO is the factory or default setting.
if set YES : the monitor is automatically set according to the PRESET of the newly selected input (VIDEO or RF).

1, ... 9, 0, TOGL, UP/ DOWN, ENTER : Data Entry Keys
Keys used in combination with other keys in the operation modes VIDEO, FUNC, RF and MENU.
These keys have no stand-alone function.

CLEAR : key to remove text from the screen in normal picture mode, and to get out of a menu without storage.

VIDEO : Selection of a VIDEO (not RF) input
Selection : **VIDEO [1... 9]**
Programming : **MENU (8) 4 1** (VIDEO CONFIGURATION)
Available VIDEO inputs with the factory VIDEO numbers (*: optional)
CODED A (1), CODED B (2), CODED C (3), RGB (4), COMPonent (5), S-VHS (6), and SERIAL A (7*), SERIAL B (8*)

RF : Selection of a RF program
Selection : **RF [0/–, 1, ... 9]**
Programming : **MENU (8) 3** (TUNER PROGRAMMING)

Items overview

Item	USE	PRE	Options
Operation			(options in bold are CAL or factory)
ACC	MENU 2	NO	**OFF**, ON
Aperture	FUNC, MENU 2	YES YES	**OFF**, ON **OFF**, ON Level : **-4.4 dB**, 3.5 dB, 6 dB Frequency : **2.6 MHz**, 5 MHz
Aperture Setting	FUNC	YES	If ON : 2.6 MHz / -4.4 dB, 3.5 dB, 6 dB & 5 MHz / -4.4 dB, 3.5 dB, 6 dB
BRightness	BRI up/down	YES	**100**, 050 ... 200
Blanking (10-bit only)	MENU 2	NO	**DIGITAL**, ANALOG
Color	FUNC, MENU 2	YES	**ON**, OFF/FILTERED, OFF/FULLBW or ON, OFF
Color Temp.	MENU 2	YES	**6500 K** , 3200 K, 9300 K, A, B
CONtrast	CON up/down	YES	**100**, 050 ... 200
CTI	FUNC, MENU 2	YES	**OFF**, ON
Degauss	FUNC, MENU 2	NO	OFF, ON (set it ON for one degauss)
HUE	HUE up/down	YES	**100**, 050 ... 200
INVALID COLOR	FUNC	NO	**OFF**, ON
Password (entrance)	FUNC 0	-	(enter as FUNC 0 XXXXX ENTER)
Password (progr.)	MENU 0	-	(to set and enable passwords)
RGB drive	MENU 2	YES	**RGB** , RED only, ..., Red off, ...
RED	FUNC	-	(**RED ON**, RED OFF)
GREEN	FUNC	-	(**GREEN ON**, GREEN OFF)
BLUE	FUNC	-	(**BLUE ON**, BLUE OFF)
RF program select	RF (X) X	-	-
RGB Sync Fixed Ext. *	MENU 2	NO	**OFF**, ON
SAD	FUNC, MENU 2	YES	**OFF**, ON
SATuration	SAT up/down	YES	**100**, 050 ... 200
Scan Format *	FUNC, MENU 2	NO	**4/3** , 16/9
Scan Delay	FUNC, MENU 2	YES	**NORMAL** , H-DELAY, V-DELAY, H&V-DELAY
Setup elim.*	MENU 2	NO	**ON**, OFF
Size	FUNC, MENU 2	YES	**UNDERSCAN** , OVERSCAN
Split Screen *	FUNC, MENU 2	NO	**OFF**, ON
Sync Source	FUNC, MENU 2	YES	**INTERNAL**, EXTERNAL
Sync Time Ct	FUNC, MENU 2	YES	**SLOW**, FAST
Teletext	MENU 1	-	(to see and select teletext information)
VIDEO input selection	VIDEO X	-	-
VITC Background *	FUNC, MENU 2	NO	**ON**, OFF
VITC Position *	FUNC, MENU 2	NO	**UP LEFT** (CENTER, RIGHT), DOWN LEFT (CENTER, RIGHT)
VITC Source ID *	FUNC, MENU 2	NO	**OFF**, ON
VITC Time code *	FUNC, MENU 2	NO	**OFF**, ON
VOLume *	VOL up/down	YES	050 ... 200 (no CAL value)
Other Programmings			
Function keys	MENU 4 3	-	
Presets	MENU 5		
Remote Control	MENU 7	-	
RIS	MENU 4 2	-	
RF programs	MENU 3	-	
VIDEO inputs	MENU 4 1	-	
Adjustments			
Colour temperature	MENU 6	-	
Geometry	MENU 9	-	

* : not modified by CAL
* : modified by CAL but not by PRESET

FUNC

Key which transforms the numeric keypad into a function keypad.
More tables of Functions are available (TABLE A, TABLE B and TABLE C).
A table is only shown when items are programmed in it.
Switch between tables with **TOGL**.

To select : **FUNC [1, ... 9]**

FUNC 0 is to start entrance of a password.

To Program : **MENU (8) 4 3**
(FUNCTION CONFIGURATION)

List of available functions :
(some are not always applicable):

R ON/OFF
G ON/OFF
B ON/OFF
SIZE
SCAN FORMAT
DELAY
DEGAUSS
SAD
INVALID COLOR
COLOR
APERTURE
CTI
SPLIT SCREEN
SYNC SOURCE
SYNC TIME CT
TIME CODE
SOURCE ID
BACKGROUND
POSITION
TREBLE
BASS
SOUND MODE
DUAL SOUND
APT SETTING
- (no Function)

Programming of Function Tables :

TABLE A default :	custom :	TABLE B default :	custom :	TABLE C default :	custom :
1 RED		1 APERTURE		1 SOUND MODE [3]	
2 GREEN		2 CTI		2 DUAL SOUND [3]	
3 BLUE		3- SPLIT SCREEN		3 TREBLE [4]	
4 [1]		4 DELAY		4 BASS [4]	
5 SYNC SOURCE		5 SIZE		5	
6 SYNC TIME CT		6 TIME CODE [2]		6	
7 SCAN FORMAT		7 SOURCE ID [2]		7	
8 COLOR		8 BACKGROUND [2]		8	
9 DEGAUSS		9 POSITION [2]		9	

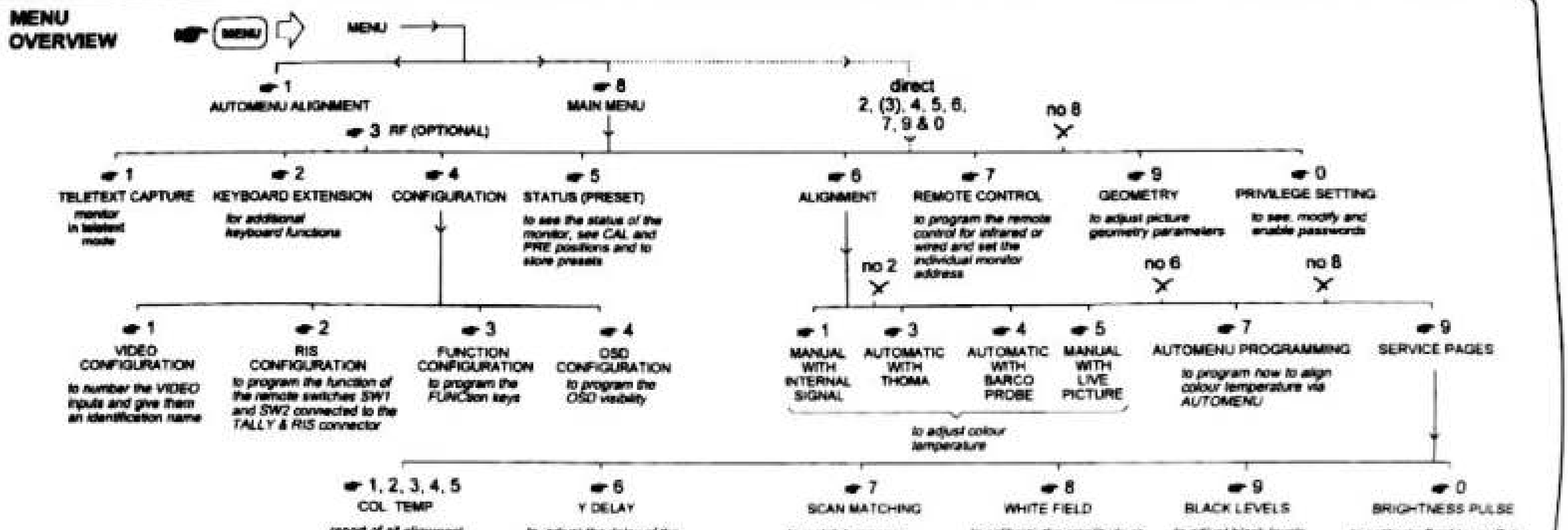
[1] : SAD with 8-bit Digital Input or INVALID COLOR with 10-bit Dig. Inp.

[2] : only with optional VITC Decoder

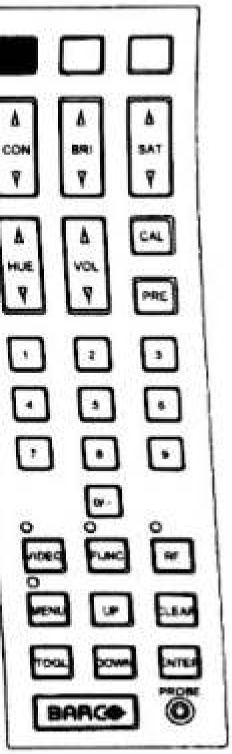
[3] : only with RF and Audio Inputs

[4] : only with optional Audio Input

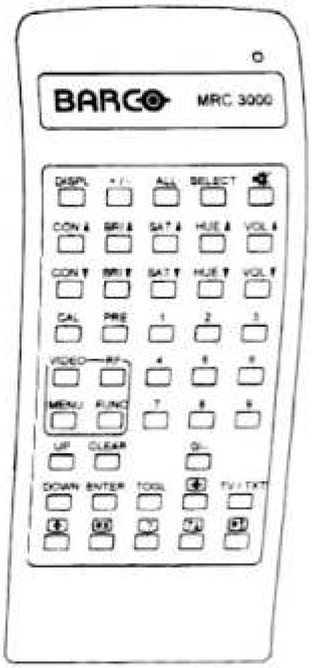
MENU OVERVIEW


MENU
MENU
1 AUTOMENU ALIGNMENT
8 MAIN MENU
direct 2, (3), 4, 5, 6, 7, 9 & 0
no 8
3 RF (OPTIONAL)
1 TELETEXT CAPTURE
monitor in teletext mode
2 KEYBOARD EXTENSION
for additional keyboard functions
4 CONFIGURATION
5 STATUS (PRESET)
to see the status of the monitor, see CAL and PRE positions and to store presets
6 ALIGNMENT
7 REMOTE CONTROL
to program the remote control for infrared or wired and set the individual monitor address
9 GEOMETRY
to adjust picture geometry parameters
0 PRIVILEGE SETTING
to see, modify and enable passwords
1 VIDEO CONFIGURATION
to number the VIDEO inputs and give them an identification name
2 RIS CONFIGURATION
to program the function of the remote switches SW1 and SW2 connected to the TALLY & RIS connector
3 FUNCTION CONFIGURATION
to program the FUNCtion keys
4 OSD CONFIGURATION
to program the OSD visibility
no 2
no 6
no 8
1 MANUAL WITH INTERNAL SIGNAL
3 AUTOMATIC WITH THOMA
4 AUTOMATIC WITH BARCO PROBE
5 MANUAL WITH LIVE PICTURE
to adjust colour temperature
7 AUTOMENU PROGRAMMING
to program how to align colour temperature via AUTOMENU
9 SERVICE PAGES
1, 2, 3, 4, 5 COL. TEMP
report of all alignment parameters per colour temperature
6 Y DELAY
to adjust the delay of the decoder 's luminance to match with chrominance
7 SCAN MATCHING
to match luminance between 16/9 and 4/3, overscan and underscan
8 WHITE FIELD
to calibrate the amplitude of the internal White Field (match to an external one)
9 BLACK LEVELS
to adjust black levels
0 BRIGHTNESS PULSE
to calibrate Brightness Pulse (with oscilloscope and on RGB input only)

CVM 3037

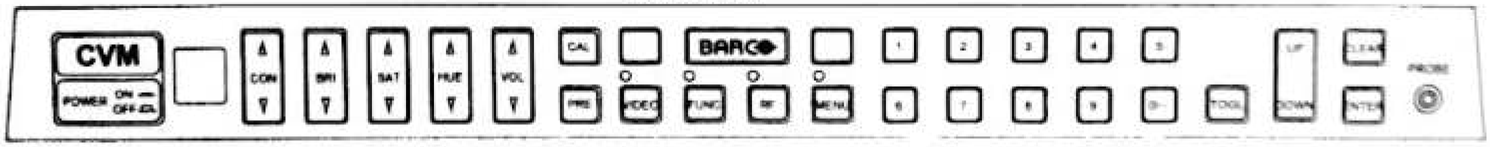


MRC 3000

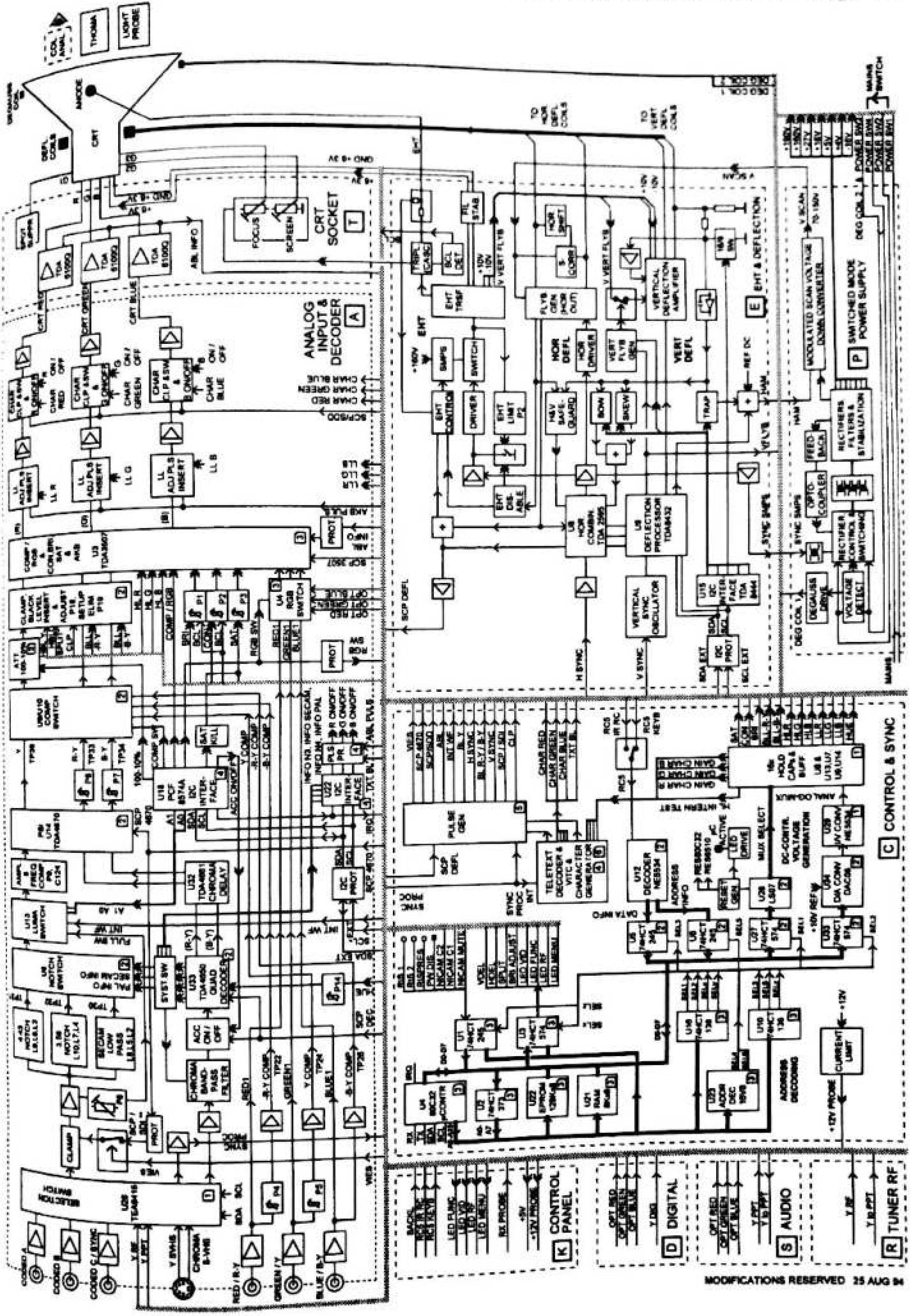


CVM 3137

CVM 3051



CVM 3000 Block Schematic Diagram

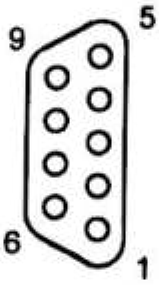


MODIFICATIONS RESERVED 25 AUG 94

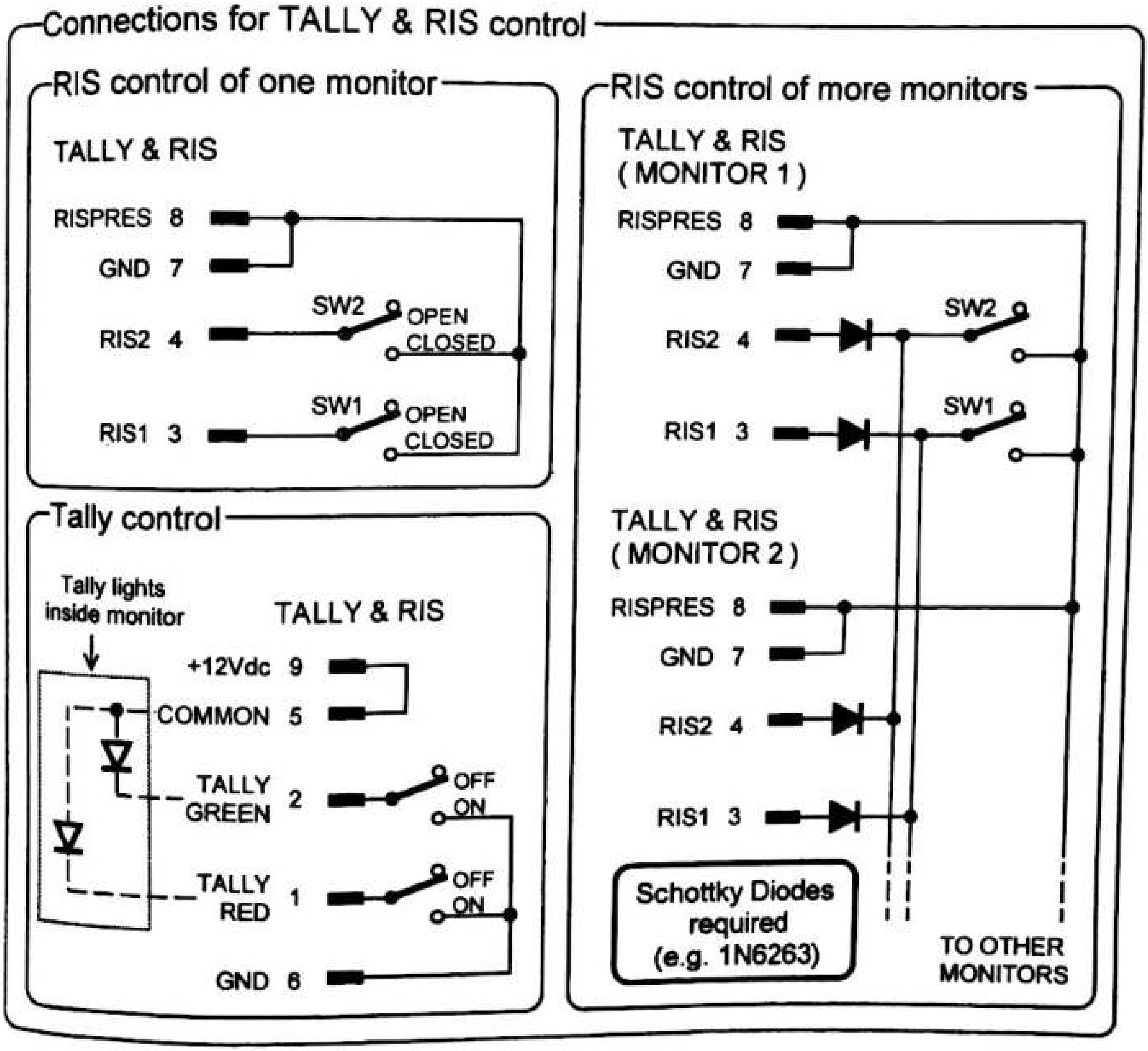
CVM 3000 Connections for Tally Lights & RIS control

Modifications Reserved, August 24, 1994

TALLY & RIS

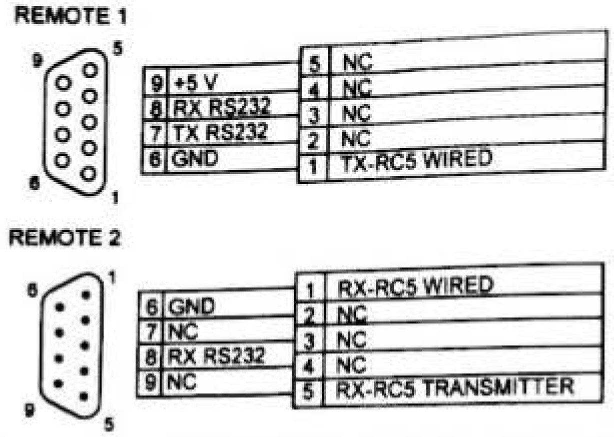


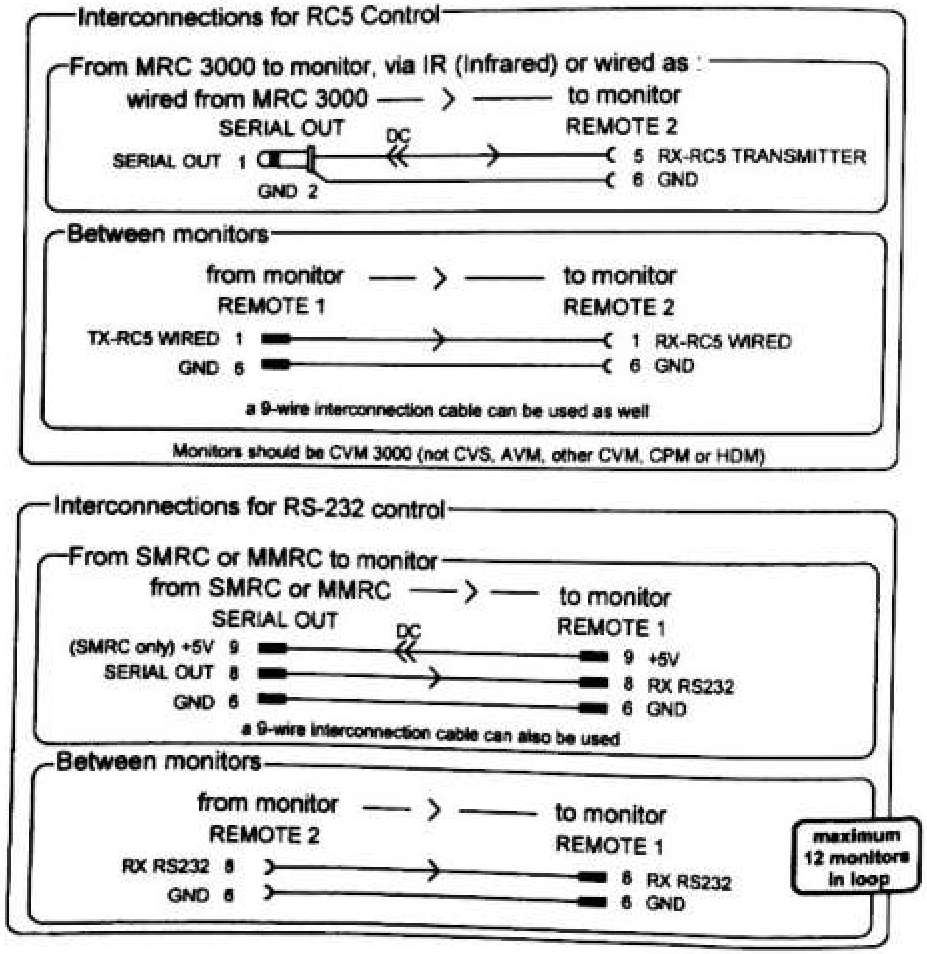
9	+12 Vdc	5	COMMON (ANODE LEDs)
8	RISPRES	4	RIS2
7	GND	3	RIS1
6	GND	2	TALLY GREEN
		1	TALLY RED


Connections for TALLY & RIS control

CVM 3000 Connections for Remote Control

Modifications Reserved, January 17, 1996




Interconnections for RC5 Control
From MRC 3000 to monitor, via IR (Infrared) or wired as :
wired from MRC 3000 —— › —— to monitor
SERIAL OUT
REMOTE 2
SERIAL OUT 1
GND 2
DC
5 RX-RC5 TRANSMITTER
6 GND
Between monitors
from monitor —— › —— to monitor
REMOTE 1
REMOTE 2
TX-RC5 WIRED 1
GND 6
1 RX-RC5 WIRED
6 GND
a 9-wire interconnection cable can be used as well
Monitors should be CVM 3000 (not CVS, AVM, other CVM, CPM or HDM)
Interconnections for RS-232 control
From SMRC or MMRC to monitor
from SMRC or MMRC —— › —— to monitor
SERIAL OUT
REMOTE 1
(SMRC only) +5V 9
SERIAL OUT 8
GND 6
DC
9 +5V
8 RX RS232
6 GND
a 9-wire interconnection cable can also be used
Between monitors
from monitor —— › —— to monitor
REMOTE 2
REMOTE 1
RX RS232 8
GND 6
8 RX RS232
6 GND
maximum 12 monitors in loop

CVM 3000

ADDENDUM ON SOFTWARES 4.X, 5.X & 6.X

Contents

SOFTWARE VERSIONS 4.X, 5.X and 6.X
SOFTWARE VERSIONS 5.X- and 6.X-only items
CVM 3000 Quick Reference Guide (Softwares 4.X & 6.X)

CVM 3000

IF YOUR MONITOR HAS SOFTWARE 4.X, 5.X or 6.X, PLEASE READ THIS FIRST !

SOFTWARE VERSIONS 4.X, 5.X and 6.X

Software 4.X for 1st Version Control & Sync

Software 4.X offers (compared to 3.X) :
NICAM RF Module support
Switch-off by TOGL of Control Function display
GENLOCK for Digital Inputs
SAT and HUE cal setting via Service Page
TOGLing between int/ext source on WHITE FIELD
Teletext start-up on previously selected page
Print-out of Tuner Program List for RF Module
All Software 3.X operation features

Software 5.X for 2nd Version Control & Sync

Software 5.X offers (compared to 3.X) :
SAD and Cross for all Input Formats
Ref. lines marking hor. sync and blanking
Closed Caption decoding
Horizontal Blanking adjustment
SAT and HUE cal setting via Service Page
Teletext start-up on previously selected page
All Software 3.X operation features

Software 6.X for 2nd Version Control & Sync

Software 6.X offers (compared to 5.X) :
NICAM RF Module support
Switch-off by TOGL of Control Function display
GENLOCK for Digital Inputs
TOGLing between int/ext source on WHITE FIELD
Print-out of Tuner Program List for RF Module
All Software 5.X operation features

Software 4.X is for CVM 3000 monitors with the 1st Version of Control & Sync module (order number V5635010 or V5635011). Software 4.X replaces the Software Versions 1.X, 2.X and 3.X.

Software 5.X is for CVM 3000 monitors with the 2nd Version of Control & Sync module (order number V5635015 or V5635016).

Software 6.X is for CVM 3000 monitors with the 2nd Version of Control & Sync module (order number V5635015 or V5635016). Software 6.X replaces the Software Version 5.X.

Software Versions 4.X and 6.X give the same operation features to the CVM 3000 monitor, with the only difference that version 6.X adds those items which are only hardware implemented on the 2nd Version of Control & Sync module :

SAD and Cross for all Input Formats
Ref. lines Marking hor. sync and blanking
Closed Caption decoding
Horizontal Blanking adjustment

This document describes what is new on Software Versions 4.X, 5.X and and 6.X compared to Software Version 3.X. Each new item description is headed by a ☞ - sign with the number(s) of the Software Version(s) that support it.

For the Softwares 5.X- and 6.X-only items, refer to the following document "SOFTWARE VERSIONS 5.X- & 6.X-only items".

Features of Softwares 4.X, 5.X and 6.X compared to 3.X

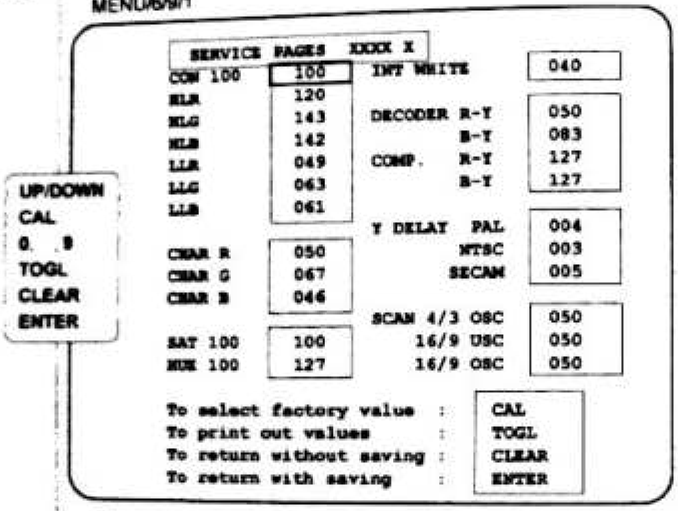
4.X, 6.X ☞ **Switch-off by TOGL of the Control Function display**

When you use a Control Function, the Control Function name is displayed with its actual value (e.g. CON 100, or BRI 090).

When the luminance of this display makes it difficult to carry out a precise setting of the picture as what happens on a Pluge signal, press **TOGL** to switch off the Control Function display, still having the control function operational.

4.X, 5.X, 6.X ☞ **SAT and HUE calibration via the Service Page**

MENU/6/9/1



```
SERVICE PAGES  XXXX X
CON 100      100     INT WHITE       040
HLR          120
HLG          143     DECODER R-Y     050
HLB          142             B-Y     083
LLR          049     COMP.   R-Y     127
LLG          063             B-Y     127
LLB          061
                     Y DELAY   PAL   004
CHAR R       050              NTSC   003
CHAR G       067             SECAM   005
CHAR B       046
                     SCAN 4/3 OSC    050
SAT 100      100         16/9 USC    050
HUE 100      127         16/9 OSC    050

To select factory value   :   CAL
To print out values       :   TOGL
To return without saving  :   CLEAR
To return with saving     :   ENTER
```

The center values are `100` for **`SAT 100`** and `127` for **`HUE 100`**.

With previous Software Versions, calibration of SATuration and HUE were hardware adjustments on the ANALOG INPUT & DECODER module. They still are but can be modified afterwards via the Service Pages MENU 6/9/1-5.

The menu shown above is an example of such a Service Page.

4.X, 5.X, 6.X ☞ **Teletext start-up on the previously selected page**

With Software Versions 1.X, 2.X and 3.X, the CVM 3000 always starts Teletext on Page 100.

Now, Teletext starts up on the latest Page selected before.

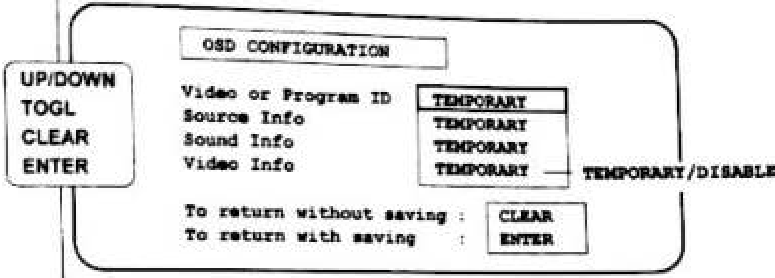
More on the following page.

4.X, 5.X, 6.X ☞ **OSD Configuration extended with the item "Video Info"**

"Video Info" stands for the display of the Video Input number when the monitor is in VIDEO MODE and another input is selected.

Through MENU/4/4, you can set the "Video Info" for TEMPORARY or DISABLED.

MENU/4/4



```
OSD CONFIGURATION

Video or Program ID     TEMPORARY
Source Info             TEMPORARY
Sound Info              TEMPORARY
Video Info              TEMPORARY

To return without saving :  CLEAR
To return with saving    :  ENTER
```

Note that in RF MODE, a corresponding "Program Info" – not existing as a Menu item – is always "temporary".

4.X, 6.X ☞ **TOGLing between int/ext source on WHITE FIELD**

When in the Service Page 8 called WHITE FIELD, you can switch between the internal White Field and the externally applied reference source by pressing **TOGL**.

This is displayed on the screen as message:

" **`INTERNAL / EXTERNAL SIGNAL : TOGL`** "

4.X, 6.X ☞ **GENLOCK for Digital Inputs**

When the SERIAL A or SERIAL B video input is selected, activating GENLOCK (as FUNCtion or via MENU 2) shows the CODED C / SYNC input on the screen but synchronized on the digital input.

4.X, 6.X ☞ **Other differences compared to previous Software Versions**

The item COLOR is named MONO.

The items RED, GREEN and BLUE are called R ON-OFF, G ON-OFF and B ON-OFF.

When pressing the **DISPL** button on a MRC 3000 IR Remote Controller, a monitor set for SINGLE INFRARED will display a message "SINGLE" on the screen.

The Software Version is only visible in the PRIVILEGE MENU.

More on the following page.

CVM 3000

4.X, 5.X, 6.X ☞

All previous features

Software Version 4.X includes all the features available with Software Version 3.X.
Software Version 5.X includes all the features available with Software Version 3.X.
Software Version 6.X includes all the features available with Software Version 5.X.

4.X, 5.X, 6.X ☞

Documentation

Refer to the added copy of the 4&6.X Quick Reference Card. Remark the adapted Function Tables, Menu Overview and Items Overview (only standard items).

Modifications Reserved, 3 May, 1996

CVM 3000

Softwares 5.X- and 6.X-only
SAD and Cross for all Input Formats
Ref. lines marking hor. sync and blanking
Closed Caption decoding
Horizontal Blanking adjustment

IF YOUR MONITOR HAS SOFTWARE 5.X or 6.X, PLEASE READ THIS ADDENDUM FIRST !

SOFTWARE VERSIONS 5.X- & 6.X-only items

Softwares 5.X and 6.X are Softwares for CVM 3000 monitors with the **Control & Sync module Version 2** (order number V5635015 or V5635016). They can not operate or be installed in monitors with the 1st Version of Control & Sync module (order number V5635010 or V5635016).
Software 6.X is an upgrade for Software 5.X.
This document describes those items which are only available with Softwares 5.X and 6.X (compared to Softwares 1.X, 2.X, 3.X and 4.X):

SAD and Cross for all Input Formats
Ref. lines Marking hor. sync and blanking
Closed Caption decoding
Horizontal Blanking adjustment

If you need the operation features which 5.X and 6.X have additionally, the Control & Sync module Version 2 (order numbers V5635015/16) should be installed.

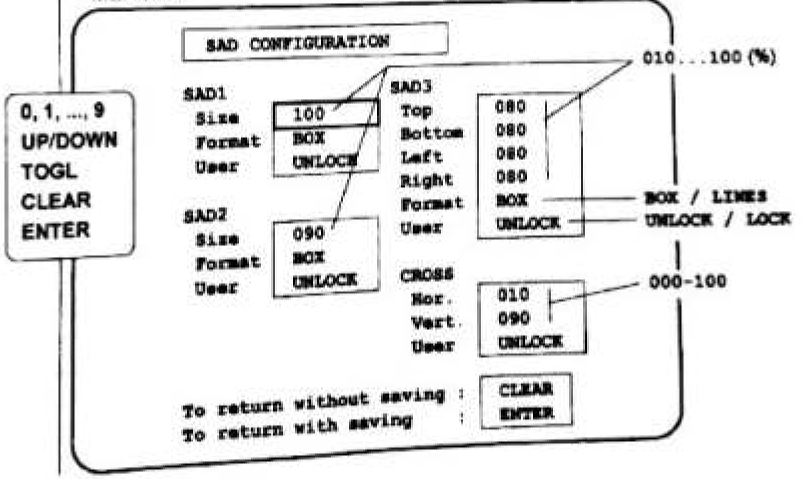
Softwares 5.X- & 6.X-only items

5.X, 6.X ☞

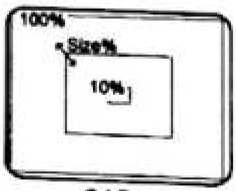
SAD (Safe Area Display) **and Cross for all input formats**

Selected via FUNCtions SAD1, SAD2, SAD3 and CROSS.
These FUNCtions have options OFF and ON.
When switched ON, during the time that the SAD name is displayed on top, you can modify its parameters (% for SAD and position for CROSS) with the keys **UP**, **DOWN** and **TOGL**.
These parameters can fully be set via MENU 4/5 SAD Configuration.
SAD and Cross lines are drawn with fine and adjacent black and white lines to guarantee visibility in all cases.

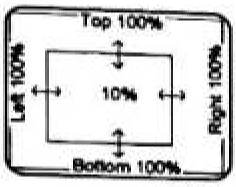
MENU/4/5



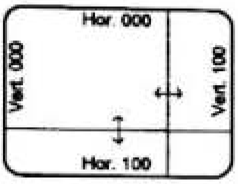
```
SAD CONFIGURATION

SAD1                 SAD3
  Size    100          Top      080
  Format  BOX          Bottom   080
  User    UNLOCK       Left     080
                       Right    080
                       Format   BOX
SAD2                   User     UNLOCK
  Size    090
  Format  BOX
  User    UNLOCK       CROSS
                         Hor.   010
                         Vert.  090
                         User   UNLOCK

To return without saving :  CLEAR
To return with saving    :  ENTER
```



SAD1, SAD2



SAD3



CROSS

All SADs and Cross can be programmed independently. Factory settings are as shown on the figure on the previous page of this document.

The available Parameters (with ranges and factory settings):

For SAD1 and SAD2 :

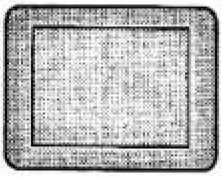
Size : range 10-100 (fact. 100 for SAD1 and 90 for SAD2).
Format : BOX (factory) or LINES – see figure below.
User : UNLOCK (factory) or LOCK. This item determines whether yes or not, the user can directly modify SAD parameters immediately after having set ON the SAD through its FUNCtion key.

For SAD3 :

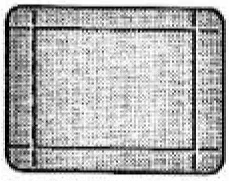
Top : top line position; range 10-100 (factory 080).
Bottom : bottom line position; range 10-100 (factory 080).
Left : left line position; range 10-100 (factory 080).
Right : right line position; range 10-100 (factory 080).
Format : BOX (factory) or LINES – see figure below.
User : UNLOCK (factory) or LOCK. Refer to SAD1 & SAD2.

For CROSS :

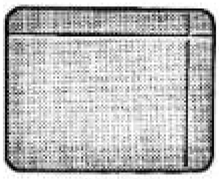
Hor. : position of the horizontal line; range 0-100 (fact. 10).
Vert. : position of the vertical line; range 0-100 (fact. 90).
User : UNLOCK (factory) or LOCK. This item determines whether yes or not, the user can directly modify the Cross parameters immediately after having set ON the CROSS through its FUNCtion key.



SAD BOX Format



SAD LINES Format



CROSS

The vertical SAD lines of the 8-bit Digital Input as supported by Software Versions 1.X, 2.X and 3.X are not supported anymore.

5.X, 6.X ☞

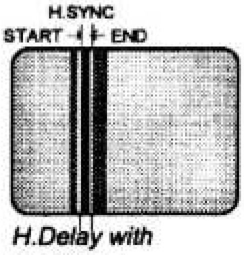
Ref. lines

Display by means of two vertical white lines of :

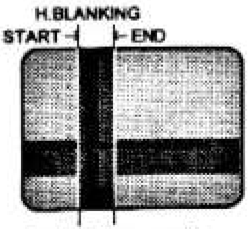
start and end of horizontal sync pulse in Horizontal Delay,
start and end of horizontal blanking in Pulse Cross.

Set ON/OFF via MENU 2 (KEYBOARD EXTENSION).

The Ref. lines are calibrated through the Service Page 6/9/0 (SAD & Timing) item 4 (Sync Reference). It is adviseable to check this calibration before doing a critical evaluation of a signal by means of the Ref. lines.



H.Delay with Ref. lines

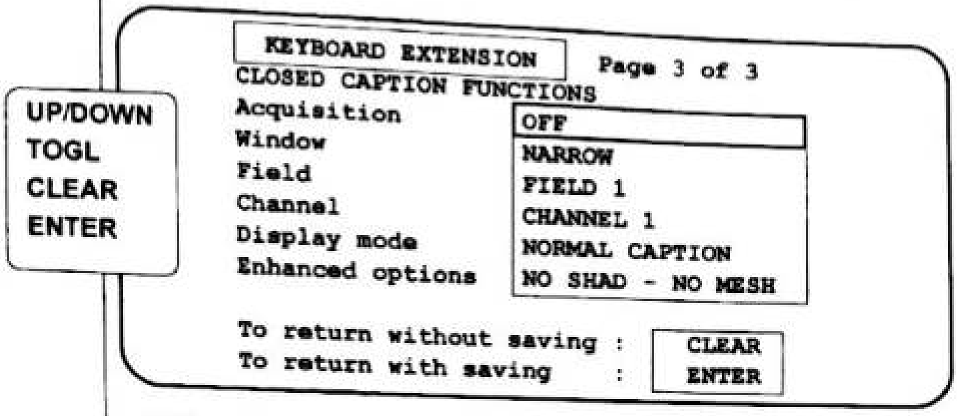


Pulse Cross with Ref. lines

5.X, 6.X ☞

Closed Caption decoding and display

Selected through FUNCtion CLOSED CAPT.
Parameters are set via MENU 2 (KEYBOARD EXTENSION) page 3 of 3.



```
UP/DOWN          KEYBOARD EXTENSION      Page 3 of 3
TOGL             CLOSED CAPTION FUNCTIONS
CLEAR            Acquisition             OFF
ENTER            Window                  NARROW
                 Field                   FIELD 1
                 Channel                 CHANNEL 1
                 Display mode            NORMAL CAPTION
                 Enhanced options        NO SHAD - NO MESH

                 To return without saving :   CLEAR
                 To return with saving    :   ENTER
```

With options :

Acquisition : `OFF / ON`
Window : `NARROW / WIDE`
Field : `FIELD 1 / FIELD 2`
Channel : `CHANNEL 1 / CHANNEL 2`
Display mode : `NORMAL CAPTION / ENHANCED CAPTION / TEXT MODE`
Enhanced options : `NO SHAD - NO MESH / SHADOW - NO MESH / NO SHADOW - MESH / SHADOW - MESH`

Factory settings are as on the above figure of the KEYBOARD EXTENSION page 3 of 3.

5.X, 6.X ☞

The new FUNCtions SAD, CROSS and CLOSED CAPTion are added to the factory **FUNCtion tables**.
The optional FUNCtions for VITC and the INVALID COLOR function of the 10-bit Digital Input have been moved.
They can of course still be moved by the user.

TABLE A default :	custom :
1 RED	
2 GREEN	
3 BLUE	
4 CLOSED CAPT.	
5 SYNC SOURCE	
6 SYNC TIME CT	
7 SCAN FORMAT	
8 COLOR	
9 DEGAUSS	

TABLE B default :	custom :
1 APERTURE	
2 CTI	
3 SPLIT SCREEN	
4 DELAY	
5 SIZE	
6 SAD 1	
7 SAD 2	
8 SAD 3	
9 CROSS	

TABLE C default :	custom :
1 SOUND MODE 3)	
2 DUAL SOUND 3)	
3 TREBLE 4)	
4 BASS 4)	
5 INVALID COLOR 1)	
6 TIME CODE 2)	
7 SOURCE ID 2)	
8 BACKGROUND 2)	
9 POSITION 2)	

1) : only with optional 10-bit Dig. Inp.
2) : only with optional VITC Decoder
3) : only with RF and Audio Inputs
4) : only with optional Audio Input

5.X, 6.X ☞

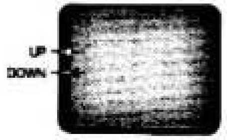
Service Page MENU 6/9/0 becomes `'SAD & Timings'` with Software Version 5.X. It was `'Brightness Pulse'` before.

1, 2, 3, 4
UP/DOWN
BRI
0
CLEAR
ENTER

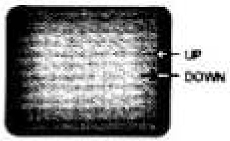
```
SAD & TIMING ADJUSTMENT
Blanking left    = 002   <---- text line only visible
                               when an item is selected
BLANKING LEFT    = 1
BLANKING RIGHT   = 2
SAD POSITIONING  = 3
SYNC REFERENCE   = 4

BRI cal = 0
Exit    = CLEAR
Save    = ENTER

To return without saving  :  CLEAR
To return with saving     :  ENTER
```

Items 1 and 2 : Blanking Left and Right

Adjustment of the horizontal picture blanking on two independent points : left (or end of horizontal blanking) and right (or start of horizontal blanking).



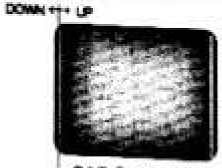
BLANKING LEFT



BLANKING RIGHT

Item 3 : SAD Positioning

Positioning in horizontal direction of SAD and Cross with reference to the trailing edge of the horizontal sync pulse. The picture is shown with underscan size and with vertical marker lines visible on the left and right sides. Adjust the left white marker line (use keys **UP** and **DOWN**) to match with the start of active picture.
BRI adjustment is possible to increase visibility. With key **0**, you can return to calibrated brightness.
For critical evaluations with SAD, it is adviseable to check this "SAD Positioning" adjustment before.
This SAD Positioning only determines the position of SAD and Cross, but has no influence on other timings.



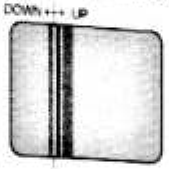
SAD Positioning

UP/DOWN
BRI
0
CLEAR
ENTER

Item 4 : Sync Reference

Calibration of the position of the 'Ref. lines' which mark the starts and ends of horizontal sync (in Horizontal Delay) and horizontal blanking (in Pulse Cross), when set ON via MENU 2

UP/DOWN
BRI
0
CLEAR
ENTER



The picture is shown in horizontal delay and two white vertical marker lines are visible. The left white marker line shall be adjusted (use keys **UP** and **DOWN**) to match with the leading edge of the horizontal sync pulse.
BRI adjustment is possible to increase visibility. With key **0**, you can return to calibrated brightness.
For critical evaluations with "Ref. lines", it is adviseable to check this "Sync Reference" adjustment before.

This "Sync Reference" only determines the position of Ref. lines and has no influence on other timings.

Modifications Reserved, 3 May, 1996

CVM 3000

IF YOUR MONITOR HAS SOFTWARE 7.X, PLEASE READ THIS FIRST !

SOFTWARE VERSION 7.X

Software 7.X for 2nd Version Control & Sync

Software 7.X offers (compared to 6.X) :
COMB Filter Analog Input Module support
Teletext Configuration for setting :
    Teletext startup page
    Monitor startup in Teletext mode
All Software 6.X operation features

This document describes what is new on Software Version 7.X compared to Software Version 6.X.
Each new item description is headed by a ☞ - sign.

Refer also to the document "SOFTWARE VERSIONS 5.X- & 6.X-only items".

Software 7.X is for CVM 3000 monitors with the 2nd Version of Control & Sync module (order number V5635015 or V5635016).
Software 7.X replaces the Software Versions 5.X and 6.X of which it keeps all the operation features.

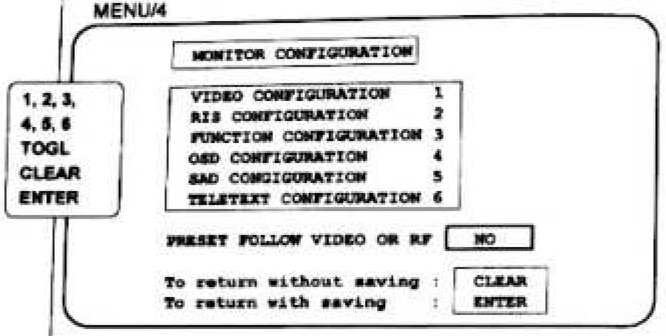
The Order Number of a Software 7.X EPROM is **V5685301**.

Features of Software 7.X compared to 6.X

7.X

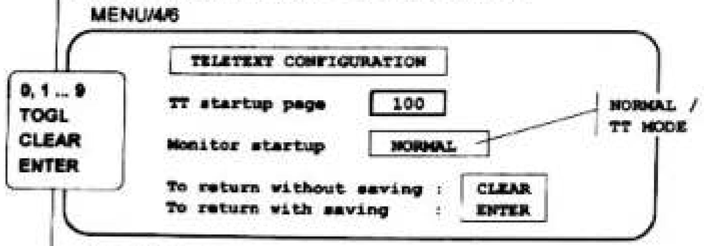
Teletext Configuration

The Configuration menu (MENU 4) is extended with an item TELETEXT CONFIGURATION (MENU 4/6) to program the startup of Teletext.



```
MENU/4

1, 2, 3,        MONITOR CONFIGURATION
4, 5, 6
TOGL            VIDEO CONFIGURATION      1
CLEAR           RIS CONFIGURATION        2
ENTER           FUNCTION CONFIGURATION   3
                OSD CONFIGURATION        4
                SAD CONGIGURATION        5
                TELETEXT CONFIGURATION   6

                PRESET FOLLOW VIDEO OR RF   NO

                To return without saving :  CLEAR
                To return with saving    :  ENTER
```

After selection of item 6 appears the following menu :



```
MENU/4/6

0, 1 .. 9       TELETEXT CONFIGURATION
TOGL
CLEAR           TT startup page      100
ENTER
                Monitor startup      NORMAL      NORMAL /
                                                 TT MODE

                To return without saving :  CLEAR
                To return with saving    :  ENTER
```

TT startup page

When going into Teletext mode, the first selected page has the number set in the Teletext Configuration.

Monitor startup

When the monitor is switched on, start-up is with a normal picture (NORMAL) or in Teletext Mode (TT MODE).

Teletext startup

With Software Versions 1.X, 2.X and 3.X, the CVM 3000 always starts Teletext on Page 100.

With Softwares 4.X, 5.X and 6.X, Teletext starts up on the latest selected page.

With Software 7.X, Teletext starts up with the page entered in the Teletext Configuration.

7.X

Support of the Analog Input & COMB Decoder module

Software 7.X is the first to support the ANALOG INPUT & COMB DECODER module.

Compared to the operation with the standard ANALOG INPUT & DECODER module – which is also supported by Software 7.X – following items are different.

COMB ON/OFF

Item available as FUNCtion and in MENU 2.

COMB comes in the place of the CTI item of the standard ANALOG INPUT & DECODER module (also in the factory set FUNCtion table).

In CALibrated position, COMB is ON.

Can be preset.

NORMAL COMB / ENHANCED COMB

Item available as FUNCtion only.

In ENHANCED COMB mode, Aperture level is set for +4 dB and Aperture frequency for 5 MHz. This is however not visible in MENU 2 (Keyboard Extension).

Can not be preset and is not altered by CAL.

Color System AUTOMATIC / PAL / NTSC 3.58

Item available in MENU 2 (Keyboard Extension) only.

AUTOMATIC :	the monitor selects the colour system automatically (PAL or NTSC 3.58)
PAL :	monitor forced to PAL colour sytem
NTSC 3.58 :	monitor forced to NTSC colour system

With the ANALOG INPUT & COMB DECODER module, SECAM and NTSC 4.43 signal can not be colour decoded.

Aperture Level in steps of 1 dB

With the ANALOG INPUT & COMB DECODER module, the Aperture Level can be set in steps of 1 dB between -6 dB and +6 dB. The range covers the following levels :

-6 dB, -5 dB, ..., 0 dB, 1 dB, 2 dB, ..., 6 dB (factory set).

The Aperture frequencies are 2.6 MHz (factory) and 5 MHz.

Refer also to the added copy of the Quick Reference Guide (version "Up to Softwares 4.X and 7.X"). This Guide is updated to correspond with the highest actual Softwares on all existing Control & Sync modules.

Modifications reserved, 14 January, 1997

Standard items overview

Item	USE	PRE	Options
Operation			
ACC	MENU 2	NO	OFF, ON
Aperture	FUNC,	YES	OFF, ON
	MENU 2	YES	OFF, ON Level : **6 dB**, -4.4 dB, 3.5 dB Frequency : **2.6 MHz**, 5 MHz
Aperture Setting	FUNC	YES	If ON : **2.6 MHz / 6 dB**, -4.4 dB, 3.5 dB or 5 MHz / 6 dB, -4.4 dB, 3.5 dB
BRightness	BRI up/down	YES	**100**, 050 ... 200
Closed Caption	FUNC, MENU 2	NO	**OFF**, ON
Color System	MENU 2	NO	**AUTOMATIC**, PAL, NTSC 3.58
Color Temp.	MENU 2	YES	**6500 K** , 3200 K, 9300 K, A, B
COMB	FUNC, MENU 2	YES	**ON**, OFF
CONtrast	CON up/down	YES	**100**, 050 ... 200
Cross	FUNC	YES	**OFF**, NO
CTI	FUNC, MENU 2	YES	**OFF**, ON
Degauss	FUNC, MENU 2	NO	**OFF**, ON (set it ON for one degauss)
Enhanced Comb	FUNC	NO	**NORMAL COMB**, ENHANCED COMB
Genlock	FUNC, MENU 2	NO	**OFF**, ON
HUE	HUE up/down	YES	**100**, 050 ... 200
Mono	FUNC, MENU 2	YES	**ON**, OFF/FILTERED, OFF/FULLBW or **ON**, OFF
Password (entrance)	FUNC 0	-	(enter as FUNC 0 XXXXX ENTER)
Password (progr.)	MENU 0	-	(to set and enable passwords)
Ref. lines	MENU 2	NO	**OFF**, ON (calibration via MENU 6/9/0)
RGB drive	MENU 2	YES	**RGB** , RED only, ..., Red off, ...
RED, GREEN, BLUE	FUNC	-	(**RED, ... ON**, RED, ... OFF)
RGB Sync Fixed Ext. *	MENU 2	NO	**OFF**, ON
SAD	MENU 2	YES	**OFF**, SAD1, SAD2, SAD3, CROSS
SAD1, SAD2, SAD3	FUNC	YES	**OFF**, ON (setting possible or via MENU 4/5)
SATuration	SAT up/down	YES	**100**, 050 ... 200
Scan Format *	FUNC, MENU 2	NO	**4/3** , 16/9
Scan Delay	FUNC, MENU 2	YES	**NORMAL** , H-DELAY, V-DEL., H&V-DEL.
Setup elim.*	MENU 2	NO	**ON**, OFF
Size	FUNC, MENU 2	YES	**UNDERSCAN** , OVERSCAN
Split Screen *	FUNC, MENU 2	NO	**OFF**, ON
Sync Source	FUNC, MENU 2	YES	**INTERNAL**, EXTERNAL
Sync Time Ct	FUNC, MENU 2	YES	**SLOW**, FAST
Teletext	MENU 1	-	(to see and select teletext information)
VIDEO input selection	VIDEO X	-	-
Other Programmings			
Function keys	MENU 4/3	-	
OSD	MENU 4/4		
Presets	MENU 5		
Remote Control	MENU 7	-	
RIS	MENU 4/2	-	
SAD	MENU 4/5		
Teletext Startup	MENU 4/6		
VIDEO inputs	MENU 4/1	-	
Adjustments			
Black Levels	MENU 6/9/9		
Colour temperature	MENU 6	-	
Geometry	MENU 9	-	
SAD & Timing	MENU 6/9/0	-	(also via FUNC for SAD)
Scan Matching	MENU 6/9/7	-	
White Field	MENU 6/9/8	-	
Y-delay	MENU 6/9/6	-	

options printed bold are CAL or factory

* : not modified by CAL
° : modified by CAL but not by PRESET

C V M 3 0 0 0

Quick Reference Guide (Up to Softwares 4.X & 7.X)

POWER ON/OFF : to turn ON/OFF the monitor (for CVM 3XXX on rear side)

BRAND NAME : key for Back Light ON/OFF switching.

CON BRI SAT HUE VOL : Control Function Keys
To control between 050 (min) & 200 (max). CAL is 100 except for VOLume
Press **TOGL** to switch on/off display.

CAL & PRE : keys to set the status of the monitor.

CAL : calibrated status of the monitor to show a normal picture with all controls in their mid or calibrated position.

PRESET : preset status of the monitor as programmed for the active input

Setting the PRESET of a VIDEO or RF input :

method 1 : set picture to your liking and then select **MENU 5** , **TOGL** for STATUS and **ENTER**.

method 2 : Select **MENU 5** , **TOGL** for the PRESET table and with **UP/DOWN** and the numeric keys modify value(s) and finally **ENTER**.

PRESET FOLLOW VIDEO OR RF (options NO / YES) : set via MENU 4

if set NO : the monitor keeps its status when another input (VIDEO or RF) is selected. NO is the factory or default setting.

if set YES : the monitor is automatically set according to the PRESET of the newly selected input (VIDEO or RF).

1, ... 9, 0, TOGL, UP/ DOWN, ENTER : Data Entry Keys
Keys used in combination with other keys in the operation modes VIDEO, FUNC, RF and MENU.
These keys have no stand-alone function.

CLEAR : key to remove text from the screen in normal picture mode, and to get out of a menu without storage.

VIDEO : Selection of a VIDEO (not RF) input
Selection : **VIDEO [1... 9]**
Programming : **MENU (8) 4 1** (VIDEO CONFIGURATION)
Available VIDEO inputs with the factory VIDEO numbers (*: optional)

CODED A (1), CODED B (2), CODED C (3), RGB (4), COMPonent (5), S-VHS (6), and SERIAL A (7*), SERIAL B (8*)

RF : Selection of a RF program
Selection : **RF [0/–, 1, ... 9]**
Programming : **MENU (8) 3** (TUNER PROGRAMMING)

FUNC

Key which transforms the numeric keypad into a function keypad.
More tables of Functions are available (TABLE A, TABLE B and TABLE C).
A table is only shown when items are programmed in it.
Switch between tables with **TOGL** .

To select : **FUNC [1, ... 9]**

FUNC 0 is to start entrance of a password.

To Program : **MENU (8) 4 3**
(FUNCTION CONFIGURATION)

List of available functions :
(some are not always applicable):

R ON/OFF
G ON/OFF
B ON/OFF
SIZE
SCAN FORMAT
DELAY
DEGAUSS
SAD 1
SAD 2
SAD 3
CROSSHAIR
INVAL. COLOR
MONO
APERTURE
CTI
SPLIT SCREEN
SYNC SOURCE
SYNC TIME CT
TIME CODE
SOURCE ID
BACKGROUND
POSITION
CLOSED
CAPT TREBLE
BASS
SOUND MODE
DUAL SOUND
APT SETTING
GENLOCK
COMB
ENH COMB
- (no Function)

Programming of Function Tables :

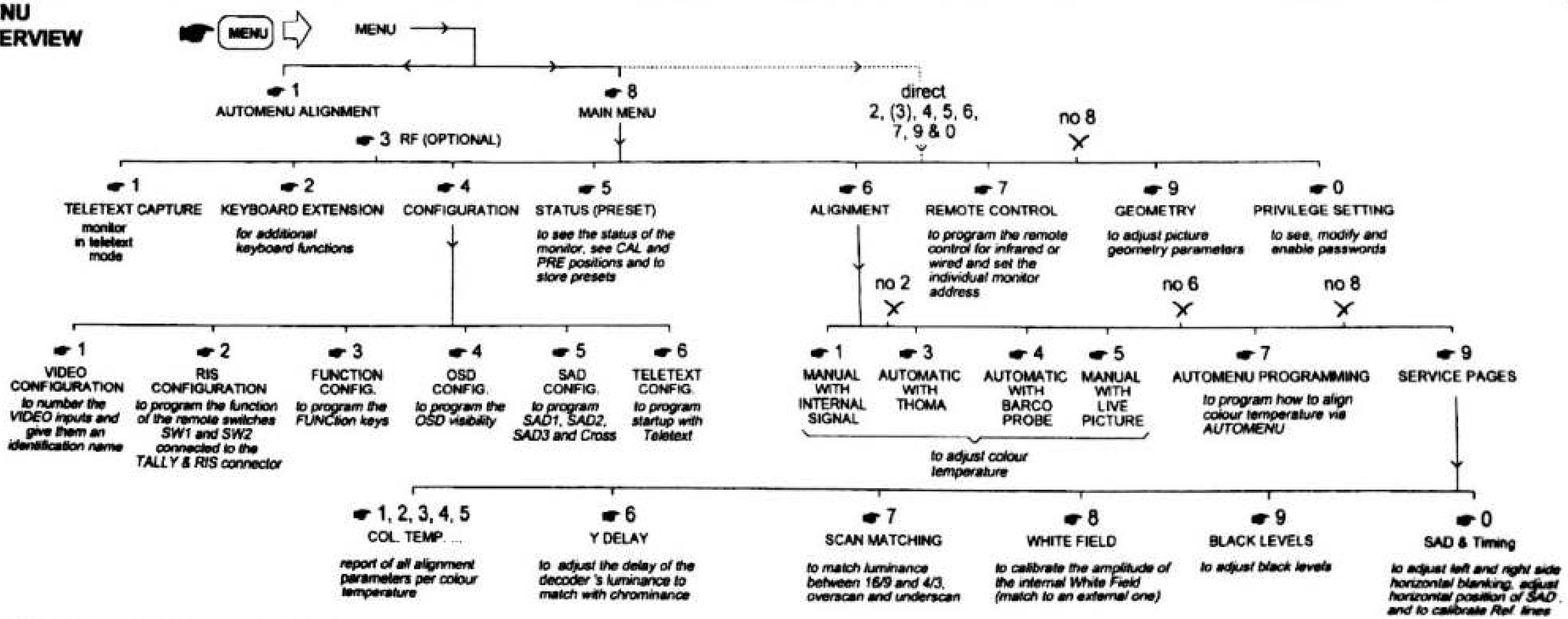
TABLE A default :	custom :
1 R ON/OFF	
2 G ON/OFF	
3 B ON/OFF	
4 CLOSED CAPT.	
5 SYNC SOURCE	
6 SYNC TIME CT	
7 SCAN FORMAT	
8 MONO	
9 DEGAUSS	

TABLE B default :	custom :
1 APERTURE	
2 CTI (or COMB 5))	
3 SPLIT SCREEN	
4 DELAY	
5 SIZE	
6 SAD 1	
7 SAD 2	
8 SAD 3	
9 CROSSHAIR	

TABLE C default :	custom :
1 SOUND MODE 3)	
2 DUAL SOUND 3)	
3 TREBLE 4)	
4 BASS 4)	
5 INVALID COLOR 1)	
6 TIME CODE 2)	
7 SOURCE ID 2)	
8 BACKGROUND 2)	
9 POSITION 2)	

1) : only with optional 10-bit Dig. Inp.
2) : only with optional VITC Decoder
3) : only with RF and Audio Inputs
4) : only with optional Audio Input
5) : only with optional COMB

MENU OVERVIEW


MENU
MENU
1 AUTOMENU ALIGNMENT
3 RF (OPTIONAL)
8 MAIN MENU
direct 2, (3), 4, 5, 6, 7, 9 & 0
no 8
1 TELETEXT CAPTURE
monitor in teletext mode
2 KEYBOARD EXTENSION
for additional keyboard functions
4 CONFIGURATION
5 STATUS (PRESET)
to see the status of the monitor, see CAL and PRE positions and to store presets
6 ALIGNMENT
7 REMOTE CONTROL
to program the remote control for infrared or wired and set the individual monitor address
9 GEOMETRY
to adjust picture geometry parameters
0 PRIVILEGE SETTING
to see, modify and enable passwords
no 2
no 6
no 8
1 VIDEO CONFIGURATION
to number the VIDEO inputs and give them an identification name
2 RIS CONFIGURATION
to program the function of the remote switches SW1 and SW2 connected to the TALLY & RIS connector
3 FUNCTION CONFIG.
to program the FUNCtion keys
4 OSD CONFIG.
to program the OSD visibility
5 SAD CONFIG.
to program SAD1, SAD2, SAD3 and Cross
6 TELETEXT CONFIG.
to program startup with Teletext
1 MANUAL WITH INTERNAL SIGNAL
3 AUTOMATIC WITH THOMA
4 AUTOMATIC WITH BARCO PROBE
5 MANUAL WITH LIVE PICTURE
to adjust colour temperature
7 AUTOMENU PROGRAMMING
to program how to align colour temperature via AUTOMENU
9 SERVICE PAGES
1, 2, 3, 4, 5 COL. TEMP. ...
report of all alignment parameters per colour temperature
6 Y DELAY
to adjust the delay of the decoder's luminance to match with chrominance
7 SCAN MATCHING
to match luminance between 16/9 and 4/3, overscan and underscan
8 WHITE FIELD
to calibrate the amplitude of the internal White Field (match to an external one)
9 BLACK LEVELS
to adjust black levels
0 SAD & Timing
to adjust left and right side horizontal blanking, adjust horizontal position of SAD and to calibrate Ref. lines